COMPRO TECHNOLOGY

Network Video Recorder

User's Manual

Model No. **RS-2212**

RS-2208

V4-120828

Copyright
© 2012 Compro Technology, Inc. All rights reserved.

Trademark
COMPRO TECHNOLOGY Compro Technology is the registered trademarks of Compro Technology Inc. All other company and product names mentioned in this document are registered trademarks of the respective companies.

Restriction
No part of this document may be copied or reproduced in any form or by any means without the prior written consent of Compro Technology, Inc.

Disclaimer
Compro Technology makes no warranties with respect to this documentation and disclaims any implied warranties of merchantability, quality, or fitness for any particular purpose. The information in this document is subject to change without notice. COMPRO reserves the right to make revisions to this publication without obligation to notify any person or entity of any such changes.

Revision History

2012/08/28 Updated for firmware version 4.0
2012/05/04 Updated for firmware version 3.0
2011/10/28 Updated to 2.0 version
2011/05/16 Original version

Compro Technology, Inc.
www.comprosecurity.com
Tel. +886 2 2918 0169, Fax +886 2 2915 2389
3F, No.12, Alley 6, Lane 45, Pao Shin Road,
Hsintien District, New Taipei City 231, Taiwan
Support e-mail: support@comprousa.com

Contents

Chapter 1: Important Notices 1-1
Regulatory Notice 1-1
FCC Interference Statement 1-1
Operation Safety 1-1
About this Manual 1-2
Conventions in this Manual 1-2
Chapter 2: Product Overview 2-1
Package Contents 2-1
RS-2212 Feature List 2-2
RS-2208 Feature List 2-2
Hardware Overview 2-3
LED Status Indicator 2-4
System Beep Codes 2-5
Chapter 3: Hardware Installation & Network Setup 3-1
Installing New Hard Drive 3-1
Connecting the Cables 3-2
Connecting the Ethernet and Power Cable 3-2
Connecting to the Network 3-3
Network Configuration Scenarios 3-4
Scenario A 3-4
Scenario B 3-5
Chapter 4: Getting Started 4-1
Initial Software Setup 4-1
Log in to NVR on PC 4-6
Adding Camera Connections for Recording 4-8
Adding Cameras with iStart 4-8
Start Video Recording 4-9
Chapter 5: Live View 5-1
Monitor Live Video from Cameras 5-1
Page Layout 5-1
Icons on Live View Page 5-2
Top Panel 5-2
Left Panel 5-3
Using the Right-Click Menu 5-4
Chapter 6: Playback 6-1
Page Layout 6-1
Search and Play Recordings 6-2
Single File Playback 6-2
Multi-Channel Playback 6-2
Chapter 7: Configuration 7-1
Main Setup Page 7-1
Surveillance Setup 7-2
Camera Setup 7-2
Recording Setup 7-7
Events and Notifications Setup 7-10
System Information 7-13
System Status 7-13
System Loading 7-14
System Setup 7-14
Language 7-14
Date & Time 7-15
Network 7-15

DDNS 7-16
Power Management 7-17
Reset 7-17
Firmware Update 7-17
Storage Setup 7-18
Volume Management 7-18
Hard Disk S.M.A.R.T 7-19
File Sharing 7-20
Windows Network Neighborhood 7-20
FTP Server (FTP) 7-20
User Setup 7-22
User Management 7-22
Logs & Statistics 7-24
System Event Logs 7-24
Surveillance Logs 7-25
Historical Users List 7-25
Backup 7-26
One Touch Backup 7-26
Retrieve Backup Files 7-27
Multiple Server Management 7-28
Multiple Server Setup 7-28
Chapter 8: Troubleshooting 8-1
Reset to the Factory Default Settings 8-1
Password Recovery Method 8-1
Trouble with Remote Viewing on Browser 8-2
Symptoms, Causes and Solutions 8-4
Contacting Compro Technical Support 8-8
Chapter 9: Technical Specifications 9-1
RS-2212 / RS-2208 Technical Specifications 9-1
Chapter 10: Appendix 10-1
Examples of Port Forwarding Setup on Routers 10-1
List of Figures and Tables 10-4

Chapter 1: Important Notices

Regulatory Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Operation Safety

Before starting using the network video recorder, please read and follow the steps below to protect it.

- Please only use the power adapter that is supplied with the product.
- Please avoid walking on the power cord or placing heavy objects on it.
- Please do not block or cover the ventilation openings while the unit is in operation
- Place the product on an even surface at all times to avoid damage caused by falling off.
- Do not place this unit around products that produce heat, such as television or microwave oven; keep the product away from direct sunshine.
- Unplug the power cord before cleaning the product.
- Do not shake, move or disturb the product camera when it is in operation, as such actions may result in the malfunction of the device.
- Power off the unit as soon as it is found smoking or smelt unusual.
- Please do not disassemble or remodel the product; it may cause damage or fire.

About this Manual

This manual is only intended for the users of Compro RS-2212 and RS-2208 Embedded Linux network video recorder, and is applicable to firmware release 4.0. Compro RS-2212 and RS-2208 upgraded with the latest firmware are compatible with ONVIF version 1.0. For more information about ONVIF, visit www.onvif.org.

Conventions in this Manual

While you are using this manual, pay attention to some symbols and notations that are used to draw attention to special situations such as:

Caution!
Information provided here is critical to prevent damage to the product or injury to the user.

Important:
Here it provides instructions that a user must follow in order to complete a task.

Note:
Additional information or tips to help the user operate the product.

Chapter 2: Product Overview

Package Contents

Please check the package contents on your hand. If anything is missing, please don't hesitate to contact your local distributor.

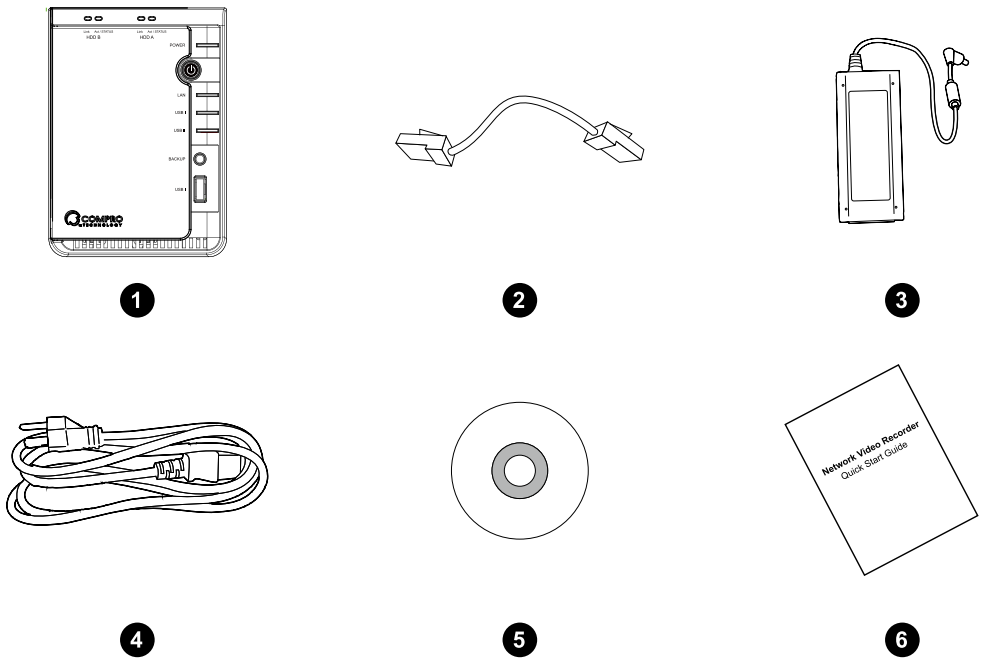


Figure 2-1. Package contents for RS-2208 / RS-2212

1. Network video recorder (hard drives not included)
2. RJ-45 LAN cable
3. Power adapter (12V)
4. Power cable
5. Installation CD
6. Quick installation guide

RS-2212 Feature List

- Embedded Linux operating system for superior reliability
- Record video from up to 12 megapixel IP cameras simultaneously
- Supports dual 3.5" SATA II HDD and RAID 0/1
- Support for ONVIF and generic RTSP streaming
- Remote recording, playback and search of video recordings
- Supports quad-channel synchronous playback mode (requires firmware version 4.0 or higher)
- One-touch backup to USB storage device
- Full PTZ control
- Web based CMS function for multiple server monitoring, event search and playback (requires firmware version 3.0 or higher)
- Intelligent iWizard for easy and effortless setup

RS-2208 Feature List

- Embedded Linux operating system for superior reliability
- Record video from up to 8 megapixel IP cameras simultaneously
- Supports dual 3.5" SATA II HDD and RAID 0/1
- Support for ONVIF and generic RTSP streaming
- Remote recording, playback and search of video recordings
- Supports quad-channel synchronous playback mode (requires firmware version 4.0 or higher)
- One-touch backup to USB storage device
- Full PTZ control
- Web based CMS function for multiple server monitoring, event search and playback (requires firmware version 3.0 or higher)
- Intelligent iWizard for easy and effortless setup

Hardware Overview

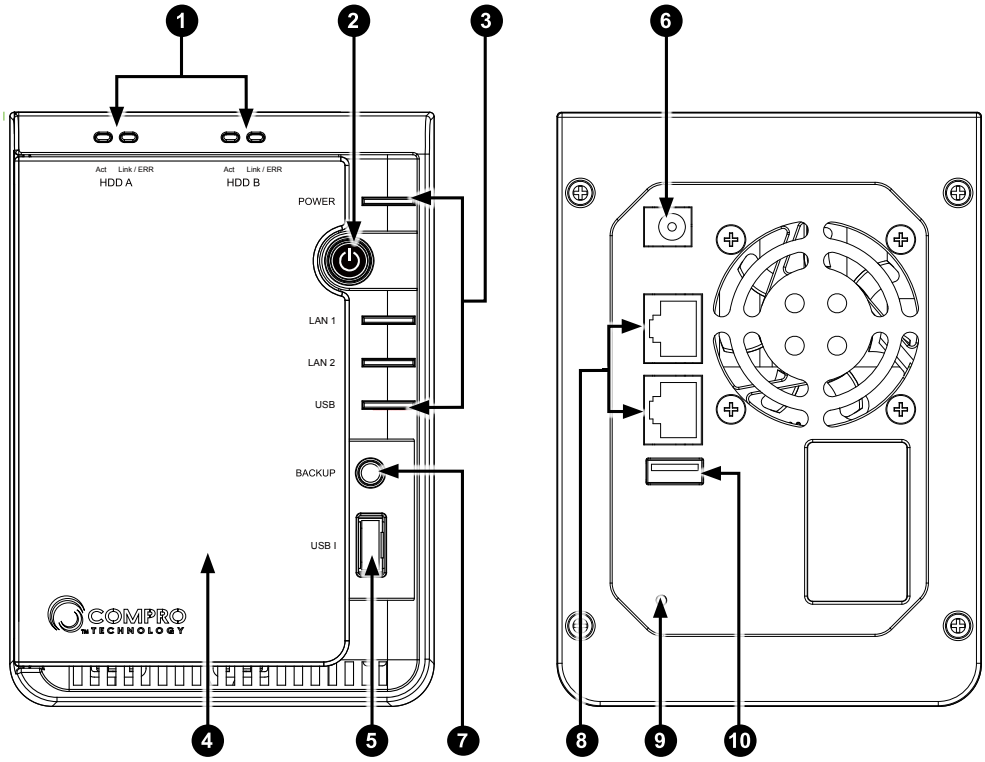


Figure 2-2. Hardware overview of RS-2208 / RS-2212

1. **Drive status indicators** – From left to right: Act (flashes when hard drive is being accessed), Link (indicates hard drive is in operation), and ERR (indicates an error).
2. **Power button** – Push the button to power on the device. To power off, press and hold the button for roughly 3 seconds before releasing it.
3. **Power / LAN / USB status indicator** – See 'LED Status Indicators' section for status indicator behaviors.
4. **Front lid** – Open the front lid to access the disk trays. To remove the disk tray, push the round release button and gently pull out the disk tray.
5. **USB port 1** – USB port allows the NVR to connect with external storage devices.
6. **Power adapter port** – Connect to your power adapter. Use only the power adapter that is supplied with the device.
7. **One-touch backup button** – Press the button to start backing up data onto the USB storage device connected to the front USB port. Button will be temporarily disabled when data transfer is in progress.
8. **Gigabit LAN ports** – Use a RJ-45 cable to connect the LAN port 2 to your network router / hub. LAN port 1 is only to be used when LAN port 2 physically fails and only supports DHCP mode.
9. **Reset button** – Press the "Reset" pinhole button or hold it down until the NVR resets itself. This will only clear user configurable settings.
10. **USB port 2** – Not used.

Important:
Please use LAN port 2 as the default port to connect the NVR to the network. LAN port 1 is only to be used when LAN port 2 physically fails and only supports DHCP mode. When LAN port 2 fails, the NVR will automatically switch to using LAN port 1(DHCP mode). Should you connect both LAN port 1 and LAN port 2, the NVR will still use LAN port 2 and the status indicator for LAN port 1 will go off while LAN port 2 remains normal operation. In addition, you must connect to LAN port 2 in order to adjust network settings using the NVR's browser interface.

LED Status Indicator

Listed below is the behavior for the LED indicators seen at the front panel.

LED	Indication
Power (Green)	• **Green** – NVR is powered on. • **Blink for 5 times** – Admin password has been reset back to default.
LAN 1 (Not used)	• **Green** – Successfully obtained IP address via DHCP mode. • **Red** – Unable to obtain IP address.
LAN 2 (Green / Red)	• **Green** – Successfully obtained IP address via static IP, PPPoE, or DHCP mode. • **Flashing green** – Setting up network. • **Red** – NVR is unable to obtain IP address; when using static IP or PPPoE, it indicates a failure in network connection test.
USB (Green / Red)	• **Green** – Successfully mounted a USB storage device; this indicator starts blinking when NVR is backing up data; when data backup completes, the indicator goes off. • **Red** – Failed to mount a USB storage device.
HDD A / B (Green / Red / Blue)	**Link / ERR:** • **Green** – HDD is installed and mounted successfully. • **Red** – HDD is installed but unsuccessfully mounted (possibly caused by an unformatted disk or unsupported disk format). **Act:** • **Blue** – This indicator flashes in blue when the HDD is being accessed.

Table 2-1. LED status

System Beep Codes

Beep	Description
1 long beep followed by 2 short beeps	• Unable to copy data while backing up data onto external hard disk drive
1 short beep followed by 1 long beep; repeat twice	• System fan anomaly
1 long beep	• Hardware shutdown • System is ready for use
2 short beeps	• Admin password has been reset back to default

Table 2-2. System beep codes

Chapter 3: Hardware Installation & Network Setup

Installing New Hard Drive

Follow the steps below to install a new hard drive.

1. Power off the NVR. Open then front lid, and then push the hard drive release button to release the lever from its locked position.
2. Pull the lever slightly outward, and gently pull the hard drive tray out. Then align the mounting holes on the hard drive to match the hard drive tray, and use screws to fasten the hard drive to the tray.
3. Slide the hard drive tray into the drive bay. Then gently push the hard drive tray to ensure a secure connection between the drive connector and the SATA connector inside the NVR. Finally, push the lever to its locked position and close the front lid.
4. To install a second hard disk drive, repeat the previous steps. If you intend to use RAID 1, it is recommended to install two identical hard drives to avoid data incompatibility.

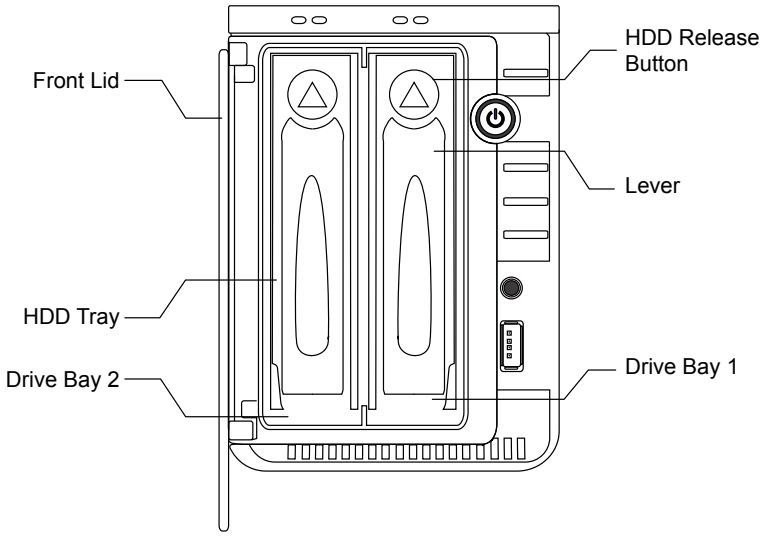


Figure 3-1. Installing new hard disks

Important:

- It is recommended to install a new hard disk drive on your NVR. Compro does not guarantee full compatibility across all hard drives. Please select a compatible hard drive model from www.comprousa.com.
- When only installing a single hard disk drive into the NVR system, be sure to install it in the primary drive bay (HDD A). If you install a single hard disk drive in the secondary drive bay (HDD B) and use this configuration to record video, there will be potential data compatibility issue later on when you install a new hard disk drive in the primary drive bay.

Note:
For 24/7 nonstop recording on the NVR, Compro recommends the usage of Seagate® SV35 Series™ and Western Digital® Red series hard drives.

Connecting the Cables

Connecting the Ethernet and Power Cable

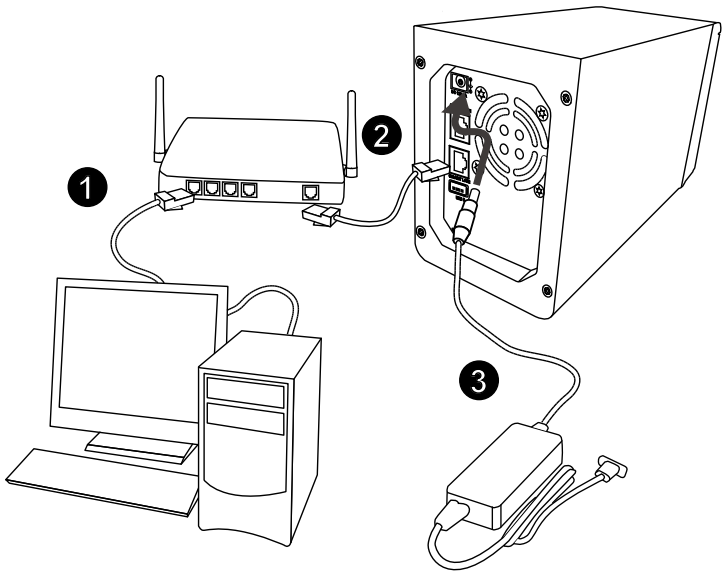


Figure 3-2. Connecting the cables

1. **LAN cable from PC to hub/router:** If your LAN cable from PC has been connected to the Cable/ADSL modem, please re-connect it to the LAN port of your hub/router.
2. **LAN cable from NVR to hub/router:** Use the bundled RJ-45 LAN cable to connect the **2nd LAN port** of the NVR to the LAN port of your hub/router. LAN port 1 is only to be used when LAN port 2 physically fails and only supports DHCP mode.
3. **Power:** Attach the Power adapter to the NVR's power connector located at its rear panel. Then connect the power plug to a power outlet.

Important:
Please use LAN port 2 as the default port to connect the NVR to the network. LAN port 1 is only to be used when LAN port 2 physically fails and only supports DHCP mode. Should you connect both LAN port 1 and LAN port 2, the NVR will still use LAN port 2 and the status indicator for LAN port 1 will go off while LAN port 2 remains normal operation. In addition, you must connect to LAN port 2 in order to adjust network settings using the NVR's browser interface.

Connecting to the Network

Connect your NVR and network cameras to a hub using an RJ-45 Ethernet cable. Then connect the hub to a router to allow operation over the Internet. (The Ethernet hub in below figure is optional. The NVR or network cameras can also be connected to your router directly.)

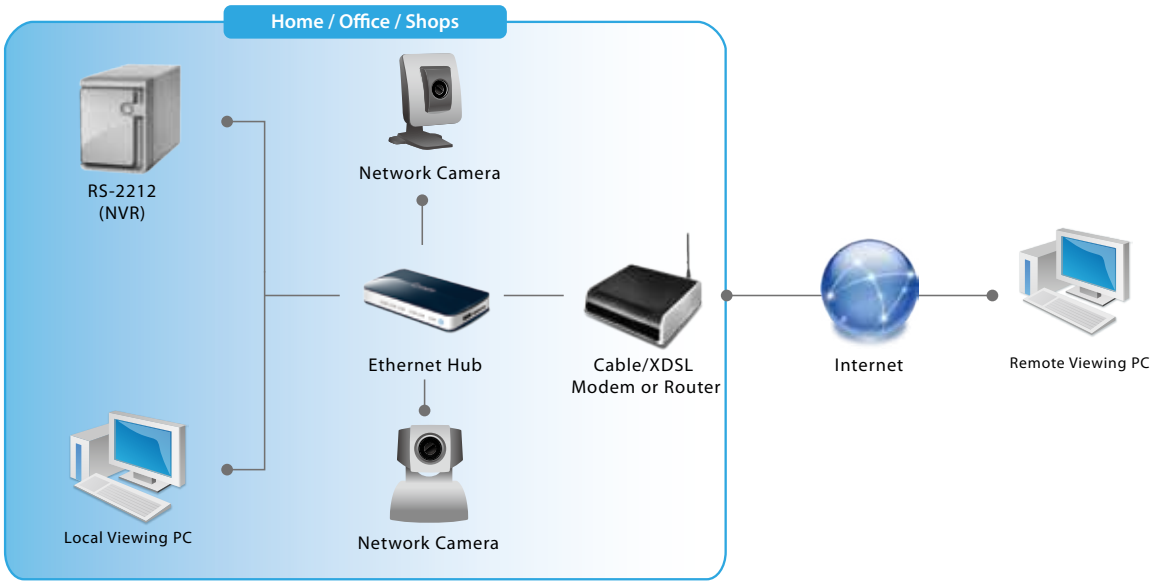


Figure 3-3. Network setup

Important:
When your NVR sits behind a router or firewall, you need to enable the port forwarding (also known as port mapping or virtual server) function on your router to enables access to the NVR from the Internet (by allowing inbound traffic on ports the NVR is using), so the remote viewing PC can access NVR.

Network Configuration Scenarios

Scenario A

Scenario A represents a network configuration in which the NVR, IP cameras, and the viewing PC are all located on the same LAN network, and are all connected to the same Ethernet switch. Each of them is assigned with an IP address within the LAN network, and each of them is configured with the same subnet mask/gateway and uses the default HTTP / RTSP port.

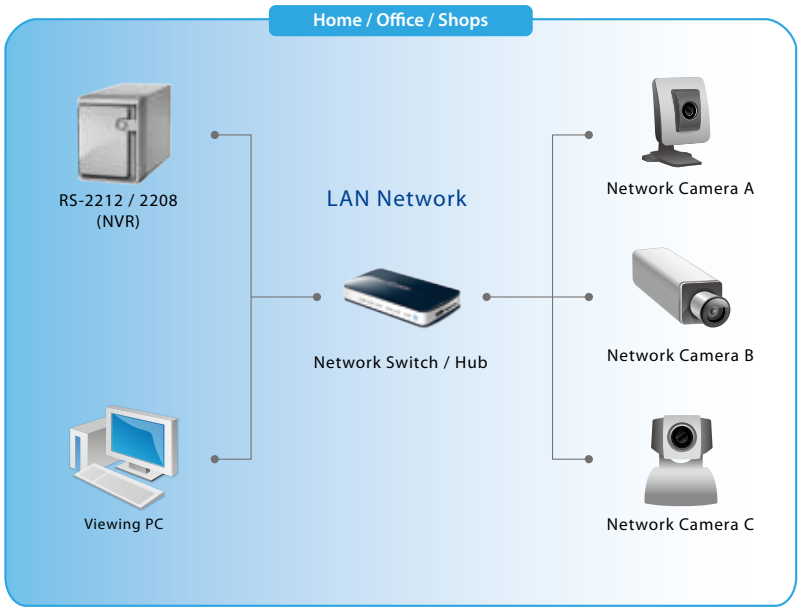


Figure 3-4. Scenario A

In this scenario, the NVR, viewing client, and network cameras may have IP addresses as follows:

Device	Assigned IP address
Viewing PC	192.168.1.100
NVR	192.168.1.101
Network Camera A	192.168.1.102
Network Camera B	192.168.1.103
Network Camera C	192.168.1.104

Table 3-1. IP addresses in scenario A

Open your web browser and enter "192.168.1.101" into the address bar to log in to your NVR and then add camera connections on the NVR

Scenario B

Scenario B exemplifies a network configuration in which the NVR and the 2 network cameras are located behind a router, which connects the LAN network to the Internet. The user on the remote viewing PC accesses the NVR over the Internet.

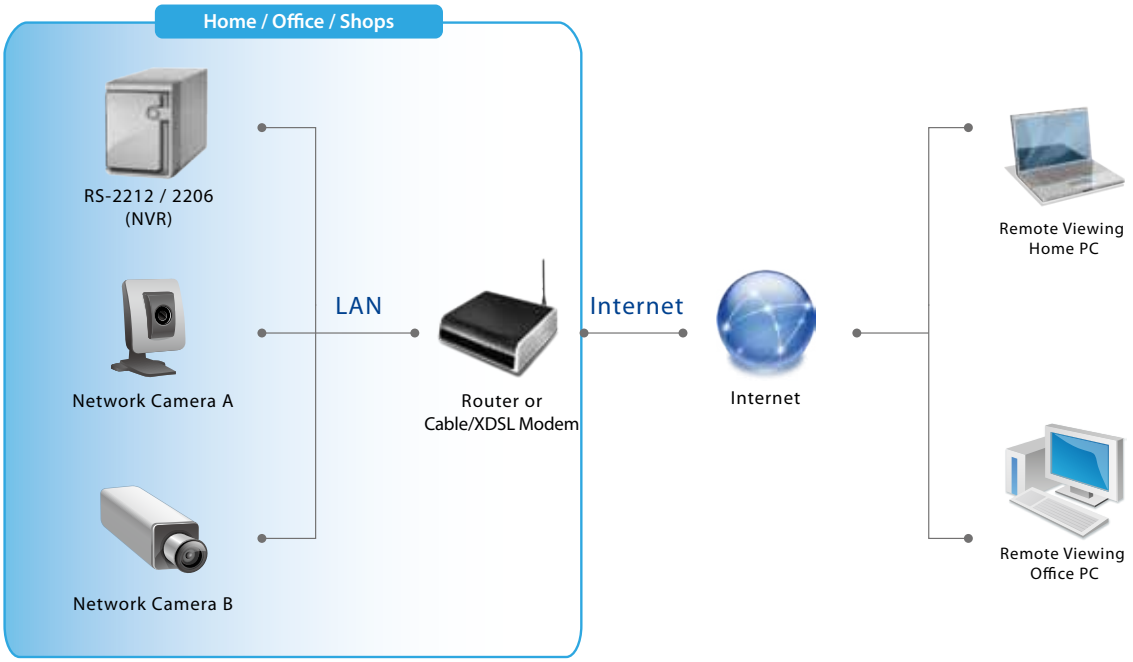


Figure 3-5. Scenario B

To allow the NVR to be accessed remotely over the Internet, you have to set up the port forwarding (also known as port mapping or virtual server on certain brands of routers) on your router. To do so, log in to your router's web interface first, and then, one after one, map the router's public ports to the NVR's LAN IP address and the ports the NVR will be using on the LAN network (private ports). The default ports used by the NVR are as follows:

Service	Port Number
HTTP	80 (user configurable)
Live Streaming	554 (based on network camera's port forwarding setting; please set up port forwarding for your network cameras; there is no need to set up port forwarding for your NVR in order to view live camera video)
Remote Playback	554 (user configurable)
FTP	21 (user configurable)
SMB	445, 139, 138, 137

Table 3-2. Port numbers involved in scenario B

Note:
If you do not want to set up port forwarding for the IP cameras yet still want to perform live viewing over the Internet, you can opt for using server relay mode. See "Enable server relay mode" for details.

In this scenario, the NVR and the 2 network cameras may have their IP addresses and mapped ports on the router as follows (assuming the router has a fixed Internet IP address):

Device	IP address	Mapped Port on the Router
Router	61.220.20.16 (WAN / public IP)	
RS-2212 / 2208	192.168.1.101	2080
Network Camera A	192.168.1.102	8001 (for camera's HTTP port)
Network Camera A	192.168.1.102	9001 (for camera's RTSP port)
Network Camera B	192.168.1.103	8002 (for camera's HTTP port)
Network Camera B	192.168.1.103	9002 (for camera's RTSP port)

Table 3-3. Port mapping in scenario B

Set up the port forwarding / mapping / virtual server on your router as follows. (Assuming you would like to access your IP camera remotely over the Internet, the following table includes setting up port forwarding for your IP cameras.)

Service	From (WAN IP)	Forward to (LAN IP)
RS-2212 / 2208 (HTTP port)	61.220.20.16:2080	192.168.1.101:80
RS-2212 / 2208 (Live Streaming)	Based on network camera's port forwarding setting	Based on network camera's port forwarding setting
RS-2212 / 2208 (Remote playback port)	61.220.20.16:554	192.168.1.101:554
RS-2212 / 2208 (FTP port)	61.220.20.16:21	192.168.1.101:21
RS-2212 / 2208 (SMB port)	61.220.20.16:445	192.168.1.101:445
Network Camera A (HTTP port)	61.220.20.16:8001	192.168.1.102:80
Network Camera A (RTSP port)	61.220.20.16:9001	192.168.1.102:554
Network Camera B (HTTP port)	61.220.20.16:8002	192.168.1.103:81
Network Camera B (RTSP port)	61.220.20.16:9002	192.168.1.103:555

Table 3-4. IP addresses in scenario B

Note:

- Your router may require a reboot after port forwarding is set.
- Should you have more than one IP cameras in your LAN, configure each additional IP camera with HTTP port number and RTSP port number increased by 1, e.g. the second IP camera will use HTTP port 81 and RTSP port 555.

Now on a remote viewing PC with Internet connection, you can enter the WAN (public) IP address of your NVR, followed by a colon and the NVR's public port number (here, for example, enter "http://61.220.20.16:2080"), into the address bar of your web browser to log in to the NVR. Then go to the camera setup page and add cameras by entering their WAN IP addresses. (Note you can still log in to your NVR locally through a machine on the LAN network and add cameras using their LAN IP addresses).

On the other hand, if your router uses a floating IP address, instead of a fixed IP address, you may need to enable the Dynamic DNS (DDNS) feature on the router (that is, if the feature is supported). So you can tie your router's up-to-date WAN IP address to a hostname with which you can access your NVR over the Internet. Consult the manufacturer of your router or refer to your router's user manual in case you need instructions. (You can also opt for using Compro's free iDDNS service on your NVR.)

Chapter 4: Getting Started

Initial Software Setup

You may now proceed to perform the initial software setup using the Compro iWizard setup utility. To set up your device, insert the installation CD supplied with the NVR into your CD-ROM drive, and the iWizard installer will start automatically and guide you during the setup process. Afterwards, select your language and choose [Device Setup], and click on the type of Compro surveillance product you wish to install. Then select your model from the list, and hit [OK] and follow the steps below.

Note:
If Autorun has been disabled in your computer, please browse the contents of the installation CD and double-click the "iWizard.exe" file to run the setup wizard.

1. Connect the cables according to the illustration. And click [Next].

Figure 4-1. Hardware setup

2. Check if the device is properly connected via the front LED indicators.

Figure 4-2. Check LED status

3. The wizard searches for all the available Compro IP surveillance products on your LAN network. Select your device from the list, and then the live video and device information will be showed on the right. (You can double-check the device's serial number, which is labeled on the case and on the package.) You may also double-click on any item on the "Connected Device(s)" list to view its live video in web browser.

Figure 4-3. Scan for your device

4. We recommend you enter a new password to protect your device. You can also click [Next] to skip this step. (The default password is "admin".)

Figure 4-4. Set your password

5. Please check the device name and its date and time setting.

Figure 4-5. Set the date / time

6. Select the configuration of your IP address to obtain IP address automatically (DHCP) or select [Advanced setting] to manually configure IP address. Then choose whether to allow iWizard to automatically configure your firewall, and set connection port. Then choose your local power line frequency.

Figure 4-6. Configure the IP address

7. If you want to use iDDNS service, please click [Yes] and input your desired address name. Then press [Check Availability] button to check if the entered address has been used. When successful, you can hit [Create Shortcut] button to create a shortcut on your desktop for convenient access.

Figure 4-7. iDDNS setup

Note:

The iDDNS is a free DDNS (Dynamic Domain Name Service) service offered by Compro. If you are using floating IP, you can apply for DDNS service to create a hostname that links to your home or office IP address, which provides easy-to-remember URL for quick access to your device. After successfully creating the iDDNS address name, you can then enter "http://(the address name you input).iddns.org in the location field of your browser to access your device.

If your LAN network and router have a firewall to prevent hacker attacks, you need to configure the HTTP port for connection from external network on your router. If you set the HTTP port as "2001" for your device, you need to attach the port number to your device's address, i.e. http://xxx (entered by you).iddns.org:2001.

8. Select your volume configuration and enter the volume name. You can also choose to create a RAID-0, RAID-1, or JBOD disk volume provided that you have installed more than one hard disk drive. When ready, click [Next], and then a confirmation dialog box appears. Click [Yes] to proceed. (The volume will be formatted later). Choose "Unassign" for "volume configuration" if you wish to set up your storage device later via the web interface.

Figure 4-8. Storage setup

Important:
When creating a RAID-1 or RAID-0 disk volume, make sure you installed two individual disks of identical or similar capacity. Otherwise, you won't be able to use all the available space on your hard disk drive (that has more capacity than the other one).

9. Set up your camera channels by clicking the plus sign icon to launch Camera setup wizard. Click the minus sign icon to remove a camera from the list. You can also configure your camera channels later via the web interface. When ready, click [Next] to proceed.

Figure 4-9. Set up your cameras

10. Here it displays the old and new settings. When ready, click [Next] to continue. Click [Previous] if you wish to change settings you've made so far.

Figure 4-10. Review your settings

11. The iWizard will load the new settings into your device. Please wait patiently and do not interrupt the process. (The disk formatting process may take a while).

Figure 4-11. Applying your settings

12. The iWizard runs system diagnosis based on your network settings and will alert you for inappropriate settings.

Figure 4-12. Diagnosis page

13. You can click the link on the screen to directly access your device on your web browser. If you want to set up another device, click [Yes]. Click [No] to exit the setup wizard.

Figure 4-13. Multi-device setup

Log in to NVR on PC

Having completed the basic setup, you can now log in to your NVR using the Compro NVR WebVUer on the Internet Explorer available on Windows operating system. Compro NVR WebVUer allows you to view live video, play back recordings or configure the NVR. To do so, first you need to find out the current IP address of your NVR, provided the NVR and your PC is now successfully connected to your LAN network or the Internet.

There are a few ways to find out the IP address: 1) By using the iWizard tool to scan for the NVR on your network; the IP address will then be revealed in the search result; this is the easiest and most preferred method. 2) By logging into your router's administration interface and check the devices being connected, their MAC ID and the corresponding IP address they've been assigned with (the NVR's MAC ID can be found on the product label). You may need to consult your router's user manual. 3) By running the iWizard utility from scratch and manually assign a new IP address to the NVR.

After you have determined the NVR's IP address, you may now:

1. Open the Internet Explorer on your Windows system.
2. Enter the NVR's IP address in the address bar. (e.g. 192.168.0.100)
3. An "Enter Network Password" window that requests the user name and password will appear; enter your user name and password (both are "admin" by default) and hit OK."

Note:
In case you forget your user name and password, you can use the reset button on the NVR to reset the user name and password (see Troubleshooting chapter).

4. After valid user name and password are entered, Internet Explorer will prompt the installation of NVR software from "Compro Technology, Inc."
5. Click on the warning message and choose to install the ActiveX.

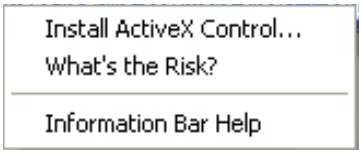


Figure 4-14. Installing Compro ActiveX

6. And then the reconfirmation dialog will appear on the screen. Please press [Install] to install the program.

Internet Explorer - Security Warning
Do you want to install this software?
Name: NVR_ActiveX.cab
Publisher: Compro Technology, Inc.
More options
Install
Don't Install
While files from the Internet can be useful, this file type can potentially harm your computer. Only install software from publishers you trust. What's the risk?

Figure 4-15. Security Warning

7. Meanwhile, the Windows Security Alert dialog box may pop up. Please click [Unblock] to unblock it from firewall.
8. Afterwards, Internet Explorer may pop up a Security Warning dialog box asking "Do you want to run this

ActiveX control." Please hit [Run] twice to run both the "Compro NVR LiveView ActiveX" and "Compro NVR Remote Playback ActiveX."

9. Now you have successfully logged in and can start monitoring and managing your NVR on the Internet Explorer.

Figure 4-16. Live view

Important:
Compro NVR and Compro ActiveX components only support 32-bit Internet Explorer. Hence, if the viewing computer system is running 64-bit version of Windows, the 32-bit version of Internet Explorer must still be used to access the NVR.

Note:
If your NVR sits behind a firewall, you will need to enable port 80 and 554 (default ports used by NVR) in your firewall and link them to the internal IP address of the NVR. Should you have more than one NVR on your network, please increase the value of the above ports by 1, e.g. the second camera will have port 81 and 555. Refer to the user manual of your router or firewall for instructions on port setting.

Adding Camera Connections for Recording

Adding Cameras with iStart

You can quickly add camera connections by using iStart. The iStart feature can scan the LAN network where your NVR is located, and display a list of cameras that can be connected with default user name and password and have not been added to the camera list. Follow the steps below to set up camera connection necessary for video recording.

1. Log in to your NVR.
2. Hit the [Setup] button in the upper-right corner on the live view screen to enter the main setup screen.
3. Go to [Surveillance Setup] > [Camera Setup] and hit the [iStart] button. The NVR will then show a list of available cameras. Select the cameras you want to add and hit OK. The iStart feature will automatically add all the selected cameras for you.

Note:
When you are adding a camera with iStart, the NVR will use the camera's current video stream settings for the default video settings of the new camera connection.

---

4. You can also individually add each camera using the [Add Camera] button, and press the [Detect] button. Up comes a "Detect Camera" window that shows all the found cameras on your network. Select one from the list and enter the correct user name and password, and press OK. Then provide the required network and device information, and press OK. Note you may change the video settings of the camera your are adding later by using the [Edit Camera] button.

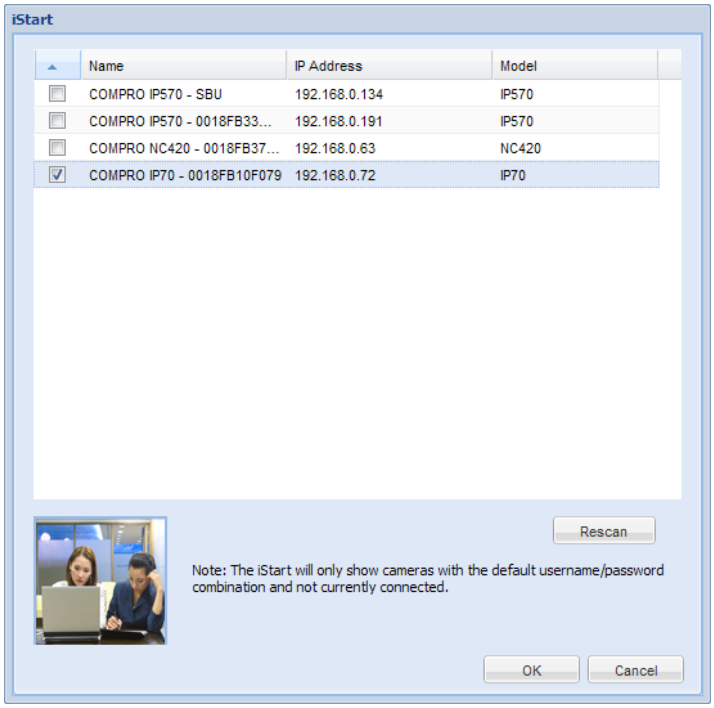


Figure 4-17. iStart window

Start Video Recording

You can initiate recording by:

1. Going to [Recording Setup] and select a camera from the drop-down list in the upper-left corner and go ahead to create a new recording schedule for the selected camera channel.
2. Returning to the Live View screen, and select a camera channel by clicking on a video window The selected channel will be bordered by a yellow frame. Then right-click and select [Record], or press the "Record" button on the left panel. Note you can switch to multi-channel view by pressing any of the view type buttons to see all the connected camera channel.

Chapter 5: Live View

Monitor Live Video from Cameras

This NVR offers a remote web client WebVUer for monitoring camera video, playing back recordings and managing NVR system over the Internet. To access the Live View page, log into the NVR's LAN or WAN IP address with the Internet Explorer. The Live View page is the default page displayed after you have logged in to the NVR.

Page Layout

You can see the basic control panel at the top and on the left-hand side, and the live video on the right-hand side. Click on the icon to hide or show the control panels. The layout of the live view page on RS-2212 and RS-2208 may vary slightly.

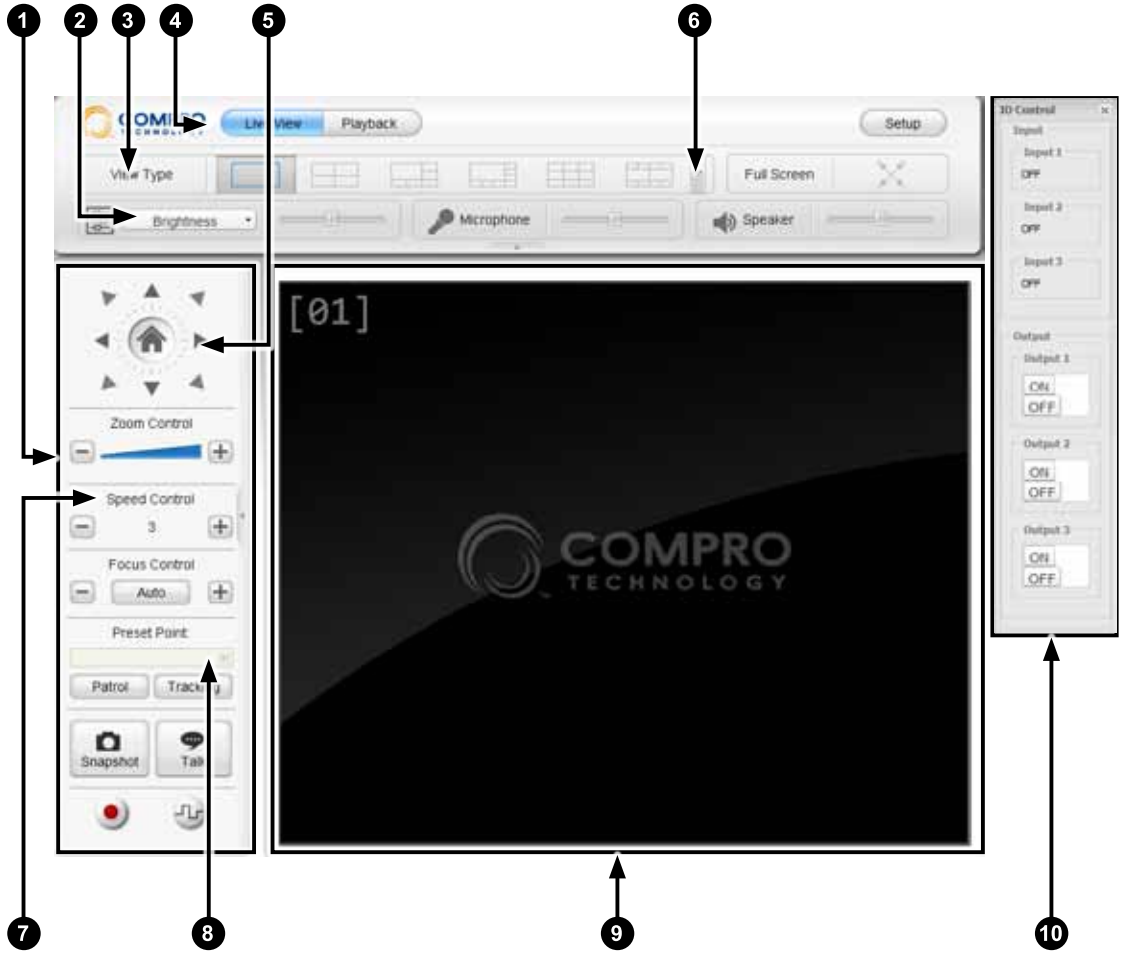


Figure 5-1. LiveView page

1. **Left control panel** – Click on the triangle icon to hide / show the panel.
2. **Enhancement function** – Allows you to adjust brightness, contrast, hue, saturation, visibility, and sharpness. To apply enhancement, click 'Enhancement' and select an item, and then use the slider to adjust video quality to your preference.
3. **View type buttons** – Choose to view only one camera or a group of cameras at a time.
4. **Main menu** – Allow you to navigate between Live View, Playback, and Setup.
5. **PTZ control** – For controlling the Pan / Tilt functionality of the selected PTZ camera. Select a PTZ camera channel and click the triangles to move the camera view in the desired directions. Click the house icon to return to the home position. The PTZ control buttons are dimmed when a non-PTZ camera channel is

selected.

6 **Show more view types** – Click the down arrow button to show more available view types. Then select a view type from the fly-out menu. The NVR's web CMS function allows you to monitor up to 30 channels at the same time. See Multiple Server Management for more information.

7 **Speed control** – Use the plus and minus icon to adjust Pan / Tilt speed on PTZ cameras. The Speed control buttons are dimmed when a non-PTZ camera channel is selected.

8 **Preset point selector** – The preset point allows you to change current camera view to a different one pre-defined for the selected PTZ camera. The Preset point selector are dimmed when a non-PTZ camera channel is selected.

9 **Live view window** – Shows live video streamed from a specific camera. Use view type buttons to change the number of channel windows displayed at a time. While you are on multi-channel view, you can switch to single-channel view by double-clicking on any camera video channel. Under single-channel view, you double-click on the video channel to exit single-channel view and return to multi-channel view. Buttons on the left control panel are accessible only when you have selected an active video channel in the live view window.

10 **IO control panel** – Press the IO button on the left control button to show the IO control panel. Depending on camera support, the input section of this panel shows the status of digital ins of the selected camera, while the output section contains On / Off buttons used to activate / deactivate IO device. The IO control panel is not available when a ONVIF camera or a generic camera is selected.

Note:
When you first enter the live view screen, the single-channel view is displayed by default. You can use the view type buttons to switch to multi-channel view, and the NVR will remember each user account's last view type. So next time the same user account logs in, the default view type will be the one this user last used.

Icons on Live View Page

Top Panel

Icons seen on the top control panel:

Icon	Name	Description
	Full screen button	The **Full Screen** button lets you enter full screen view. Press the ESC key to exit full screen mode.
	Micro-phone	Use its slider to adjust the **Microphone Volume**. This will affect the voice coming out from the camera's speaker. Click on this icon to mute the built-in microphone.
	Speaker	Use its slider to adjust the **Speaker Volume**. This will affect the voice coming out from the viewing PC's speaker. Click on this icon to mute the built-in speaker.

Left Panel

Icons seen on the left control panel (**buttons here are dimmed when selected camera channel does not support PTZ, two-way communication, or IO devices**):

Icon	Name	Description
	Home	The **Home Button** is used for returning to the preset home position for PTZ cameras.
	Zoom Control	For PTZ cameras, click on the **Zoom Control** slider or hit the "plus" and "minus" button to zoom in / out on the image.
	Focus control	For PTZ cameras, hit the "plus" and "minus" button to adjust the focal point. Or press the "Auto" button to auto-focus.
	Patrol Mode	Push the **Patrol Mode** button to make the camera rotate through different predefined camera positions. The positions are defined on the camera side.
	Auto-Tracking Mode	Push the **Tracking Mode** button and the camera will detect the moving object in the scene and automatically follow it within is coverage area (if the camera supports tracking function). The tracking function is configured on the camera side.
	Snapshot	Select a connected camera channel and press the **Snapshot** button to take a snapshot of live screen.
	Talk	This **Talk** (2-way communication) button allows you to speak into your PC microphone and broadcast through camera's speaker (per camera support). Press and hold the Talk button to talk through microphone.
	I/O Control	If the selected camera supports and is connected with IO device(s), you can push the **I / O Control** button to show the IO control panel and trigger the alarm or siren connected to the Digital Out port of the selected camera. When a ONVIF camera or a generic camera is selected, the IO control button is disabled.
	Record	The **Record** button is used to start / stop video recording on the selected channel. To start recording video, select a connected video channel and hit the Record button. Then select the destination on your viewing PC to store the video clip. (If your computer can not play AVI file format, please download and install VLC media player or KMPlayer from the Internet.)

Note:
When using the "Talk" feature, you may experience various degrees of delay between transmission from the computer and playback at the camera depending on the condition of your network environment.

Using the Right-Click Menu

The right-click menu provides additional actions on the selected channel. Simply right-click on any video window on the live view screen, and the right-click menu for the selected channel will appear. The menu contains:

Item	Description
Connect	Connect to the selected camera.
Disconnect	Disconnect the selected camera.
Setup	Bring up the viewport setting window, which allows you to manually re-assign viewport number of your camera connections in the live view screen.
Record	Initiate video recording on the selected channel.
Stop Recording	Stop video recording.
IO Output	Activate/de-activate the digital output port of the selected camera.
Digital PTZ	Enable the digital PTZ function for the selected camera. Then use the PTZ control and zoom control buttons to perform digital PTZ.
Information	Display camera information.

Chapter 6: Playback

Page Layout

On the playback page, you can see the search panel at the top, and the search result panel on the left-hand side, and the playback control panel on the lower-right side. You can click on the arrow icon to hide or show the top or left control panel. You can also leave the playback page and click [Live View] or [Setup] button to view live image or perform system configuration.

Figure 6-1. Playback page

1. **Video window** – Shows currently played recording.
2. **Timeline** – The timeline shows the current playback position in hours, minutes or seconds. The blue bar represents a section in the timeline where recording data exists.
3. **Function selection button** – Click the function selection button ( ) to switch between single-channel playback mode or multi-channel playback mode.
4. **Seek bar** – Drag the seek bar to any position to start playing from that selected point.
5. **Playback control** – From left to right: 'jump to the beginning', 'previous frame', 'play/pause', 'next frame', 'jump to the end.'
6. **Playback speed** – Drag the slider to the right to increase speed and to the left to slow up. To resume normal playback speed, press the double-arrow button ( ).
7. **Volume control** – Drag the slider to adjust volume; click the speaker icon to mute / unmute.
8. **View mode selection button** – Allows you to switch between single-channel view and quad-channel view.
9. **Snapshot button** – Allows you to take a snapshot of the selected video frame. The resolution of the saved snapshot depends on the video resolution.
10. **Download** – Download the retrieved video recording from the NVR and save it to your PC.

⓫ **Open file** – Open a recording stored on your PC and play it on this screen.

Search and Play Recordings

To play back or search recorded events, log in to your NVR on your browser and press the [Playback] button at the top to enter the playback screen.

Single File Playback

To enter the single file playback mode, click the function selection button ( ) in the bottom-left corner and then choose single-channel playback mode ( ) from the fly-out menu. Then in the single file playback window that comes up, narrow down your search criteria by filing in the following fields.

- **Server Field** – Compro NVR supports web-based CMS function, allowing users to manage multiple Compro NVR servers in one browser interface. Here you can choose to perform search on another Compro NVR as long as you have added additional servers to the list of available servers in the Multiple Server Setup page.
- **Channel Field** – By default, all the channels are selected. RS-2208 offers 8-channel recording whereas RS-2212 offers 12-channel recording.
- **Time Field** - Time field lets you designate the time period to run your search. The default time period is within the current day. Click the calendar icon to set the date and then click the down-facing arrow icon to set the time. Or manually type into the fields.
- **Event Field** – Event field allows you to search for recordings initiated by an event. By default, all the event types are selected.

Hit [Search] after you have set your search criteria. Wait until results turn up in the "Search Result" section, and then select a record and hit [Play] to start playing back.

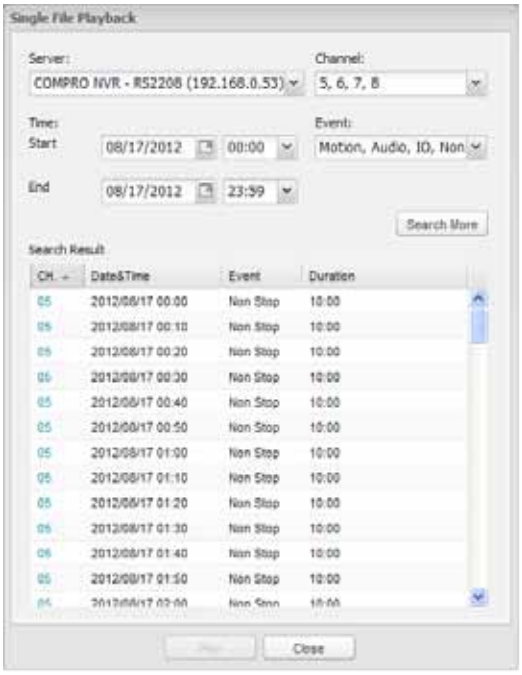


Figure 6-2. Single file playback window

Multi-Channel Playback

This allows you to play back up to 4 channels of recordings simultaneously. To enter the multi-channel playback mode, click the function selection button ( ) in the bottom-left corner and then choose multi-chan-

nel playback mode ( ) from the fly-out menu. Then in the multi-channel playback window that comes up, narrow down your search criteria by selecting a date and range of hours, and hit [Search]. After that, you can check off up to 4 channels and hit [Play] to play back multiple channels in the same screen.

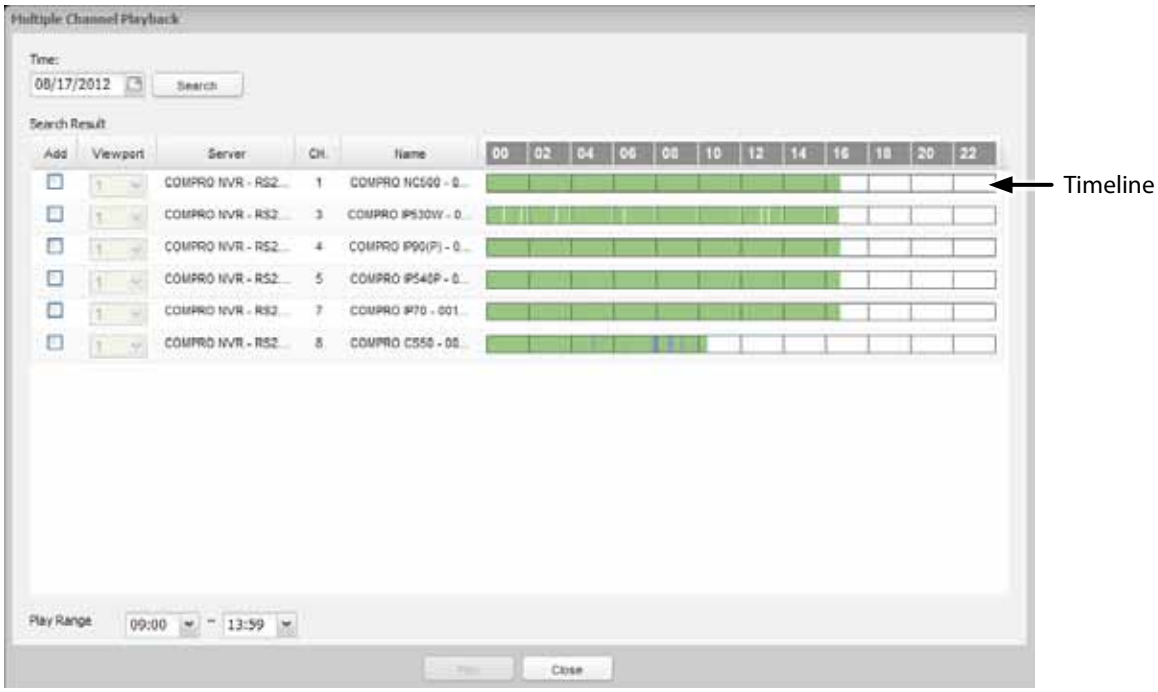


Figure 6-3. Multi-channel playback window

In the search result area, color bars are used on the timeline to mark where recording data exists in a given time range on a particular channel. The following table explains the available colors and their meaning on the timeline. The time range that has no color bars in the timeline indicates no video recording had been made in that period.

Color	Indication
	The green color represents a section in the timeline where video data recorded in continuous recording mode is available.
	The light blue color represents a section in the timeline where video recording triggered by motion detection is available.
	The pink color represents a section in the timeline where video recording triggered by audio detection is available.
	The pink color represents a section in the timeline where video recording triggered by I/O event is available.

Table 6-1. Meaning of color bar

Chapter 7: Configuration

Main Setup Page

The main setup page provides access to all the functional settings. To access the main setup page, open a web browser window and enter the NVR's IP address in the address field. Then click on the Setup button seen at the top-right location. The setup page as shown below will be displayed.

Figure 7-1. Main setup page

1. **Function List** – Here lists all the accessible functions.
2. **Show / Hide button** – Click to show or hide the function list.
3. **Live View** – Click to switch to the Live View screen.
4. **Playback** – Click to switch to the Playback screen.
5. **Search** – Input the function name you are looking for and then press Enter key.

Surveillance Setup

Camera Setup

The camera setup page allows you to add, delete, and edit cameras on your camera list. Select a camera from the list and a preview window will be displayed. When you click on a column header, an inverted triangle icon appears on the column header, and clicking on it again allows you to re-sort the list. NVR will update the video properties and status of the offline cameras on the camera list every 3 minutes, whereas online cameras' status will be updated every 30 minutes.

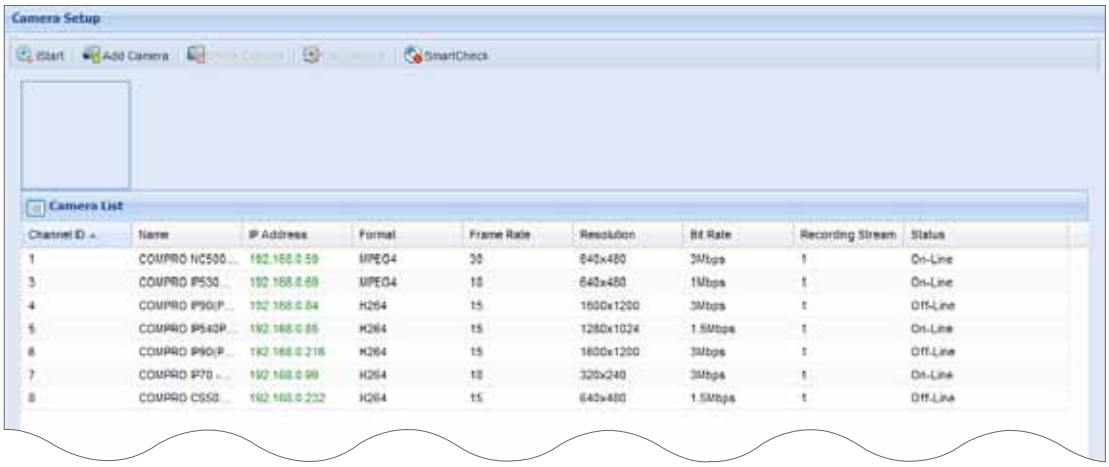


Figure 7-2. Camera Setup page

iStart

The iStart button allows for a faster and easier way to add camera connections. When you press the [iStart] button, the system will scan the LAN network where your NVR is located, and then display a list of cameras that can be connected with default user name and password and have not been added to the camera list. Then all you need to do is select the cameras from the list and hit [OK]. The camera connections will be automatically created.

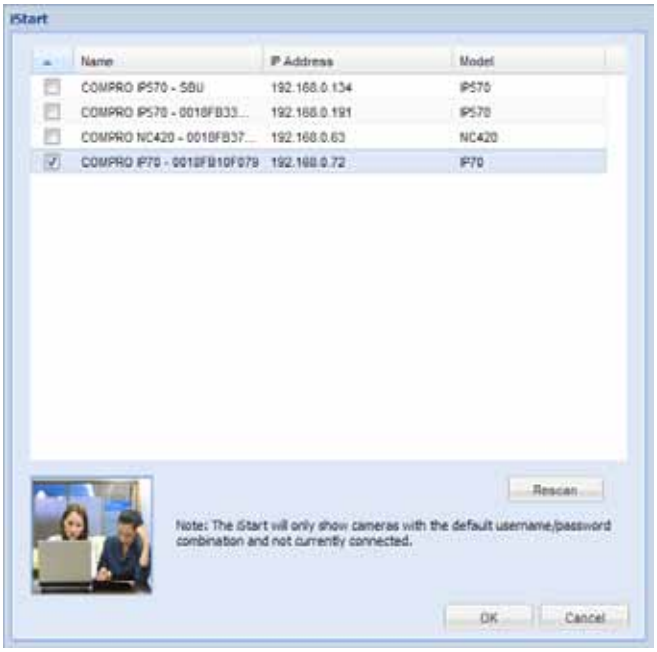


Figure 7-3. iStart window

Add Camera

Press the [Add Camera] button to add a camera to your camera list. You must provide necessary network and device information of the camera you are adding. In particular, when adding an IP camera located on the Internet, make sure all the network and device information you provide is correct.

Figure 7-4. Adding a Compro camera

Network

Pressing the [Detect] button to use iStart to search IP cameras located on the LAN network where your NVR is installed on. When attempting to add an IP camera located on the Internet, manually fill in all the network information and select correct device settings, and then hit [OK].

All the fields here are required in order to connect to your IP camera.

- **Channel** – The channel ID to be assigned to the new camera.
- **Name** – The name to be assigned to the new camera.
- **IP Address** – The LAN / WAN IP address of the new camera. When manually adding cameras, you can also put in the camera's domain name if there is any.
- **User name** – The name of the authorized user for accessing the camera.
- **Password** - The password of the user for accessing the camera.
- **HTTP** – The HTTP port used by the camera.
- **RTSP** – The RTSP port used by the camera.
- **WAN IP (Optional)** – Fill in the camera's WAN IP (public IP) address when you are adding an IP camera located on the Internet. The NVR will check if the camera and the NVR are located on the same network segment. When they are not, the NVR will attempt to establish connection using the camera's WAN IP address entered here (under the precondition that port forwarding/mapping has been properly configured on the camera's end).
- **UDP / TCP** – Select the protocol for data transmission to use either UDP or TCP. When attempting to add an IP camera located on the Internet, TCP must be selected.

- **Enable server relay mode -** Enable this relay mode (only available in version 4.0 firmware) if you do not want be bothered with port forwarding setup for the IP camera you are adding. When server relay mode is not enabled and the user is accessing live view, video data is streamed directly from the camera to the remote viewing PC (under the pre-condition that port forwarding for the IP cameras has been set up properly). On the flip side, when server relay mode is enabled, video data is streamed from the camera to the NVR first and then relayed to the viewing PC during remote live viewing, and hence no port forwarding setup is required for the IP cameras. Simply put, the main advantage of using server relay mode is that it saves the hassle of dealing with camera's port forwarding setup required for remote viewing. (Whether the relay mode is used or not, users still have to set up port forwarding for the NVR in order to monitor the system remotely over the Internet.)

Note:
If users have all camera channels connected via server relay mode, the number of users allowed to perform live viewing on the NVR simultaneously is reduced to one since enabling server relay mode imposes additional workload on the NVR server.

When adding an ONVIF camera, some available setting options are as follows.

- **Authentication -** Choose the authentication method supported by your ONVIF-conformant IP camera from the drop-down list. If the error message "Authentication Failed" appears after you hit [OK], chances are the selected authentication method is not supported or the user name and password are wrong.
- **Probe -** Push the [Probe] button after you have entered the correct IP address, user name, and password of your ONVIF camera in order to obtain its video settings. The parameters in the Recording section and the LiveView section are disabled until the NVR successfully probes your ONVIF camera.

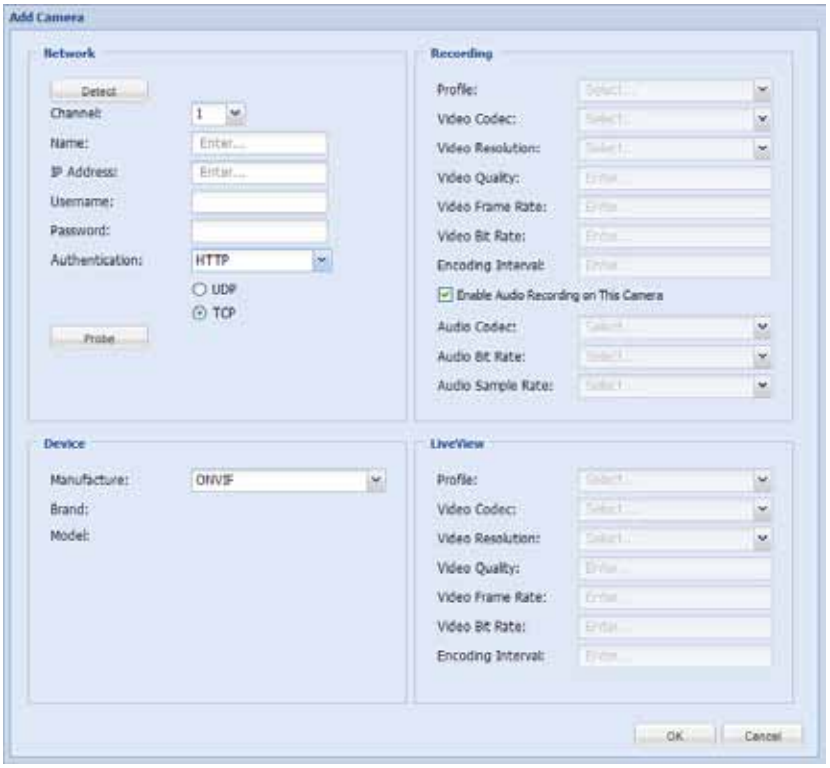


Figure 7-5. Adding an ONVIF-conformant camera

Device

Provide the device information and video stream setting here of the new camera.

- **Manufacturer** – Choose the manufacturer of the new camera from the drop down list. You can choose between Compro cameras, ONVIF-conformant cameras, and generic (supporting standard RTSP video stream) network cameras.

Important:
Compro Technology does not guarantee full functionality or compatibility across ONVIF cameras; individual experience may vary based on the camera model and firmware used.

- **Type** – Choose the camera type from the drop down list. This item is only available when adding Compro cameras.
- **Model** –Choose the model name from the drop down list. This item is only available when adding Compro cameras.
- **Enable SmartCheck** – SmartCheck function allows NVR to automatically check whether the IP addresses of your cameras have been updated. When IP addresses have been different, the NVR can update camera's IP address on its own by referencing camera's MAC ID, saving users the hassle of manually updating IP address. The SmartCheck function is not applicable to cameras that are located on the Internet and not on the NVR's LAN network. This item is only available when adding Compro cameras.

Recording

Configure the video stream format used for recording. When adding a Compro camera, the following parameters are user configurable.

- **Recording stream -** Select the video stream you want to record, provided that the secondary video stream is supported and enabled.
- **Format** – Choose the video stream format for the selected stream number.
- **Video Mode** – Choose between Turbo Picture mode (which provides best picture quality but limits the max. frame rate to 15) and Motion Adaptive ode (which offers highest frame rate but limits max. resolution to 640x480).
- **NTSC / PA**L – Choose your television system if your NVR is used with analog cameras.
- **Resolution** – Set the resolution for your selected video stream.
- **Frame Rate** – Set the frame rate for your selected video stream.
- **Bit Rate** – Set the bit rate for your selected video stream.
- **Enable Audio Recording on this Camera** – Check this option if your want to include audio data when recording live video on this camera.

You can also press [Detect] button to allow system to scan available cameras on the network. You can also add a camera detected by the system. To do so, you need to first choose a camera from the detected camera list and enter the required user name and password for the selected camera, and then press OK.

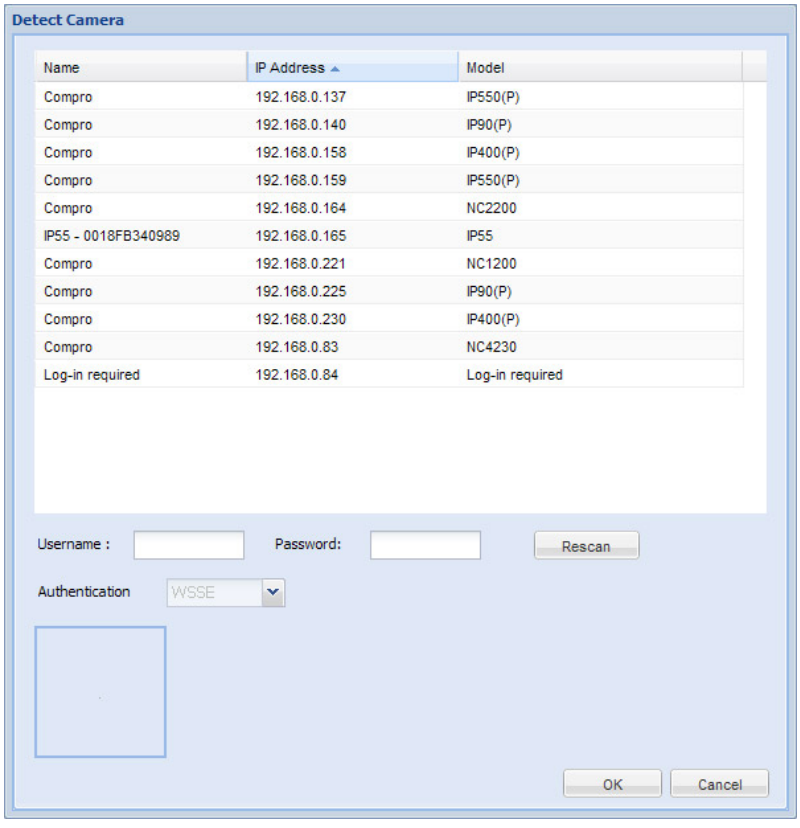


Figure 7-6. Detecting cameras

When adding an ONVIF camera, the following parameter is user configurable.

- **Encoding interval -** This corresponds to the number of frames divided by the encoded frames. When the value of encoding interval is "1", it means that all frames are encoded.

When adding a generic camera, the following parameters are user configurable.

- **Stream path -** Input the IP camera's RTSP path after you have provided correct network information. For example, enter "61.220.20.16/medias2".
- **Enable Audio Recording on this Camera** – Check this option if your want to include audio data when recording RTSP video stream from this camera.
- **Test** – Click this button to test the connection with the generic camera. Make sure you have supplied all the correct network information of your IP camera before testing connection.

LiveView

If you camera supports and has the secondary video stream enabled, you can configure the NVR to use different video stream for live view and recording, and thereby lighten the workload of your viewing PC. When adding a Compro camera, the following parameters are user configurable.

- **LiveView Stream –** Select the vide stream used for live view (when you camera supports and has the secondary video stream enabled).
- **Format** – Choose the video stream format for the selected stream number.
- **Resolution** – Set the resolution for your selected video stream.
- **Frame Rate** – Set the frame rate for your selected video stream.
- **Bit Rate** – Set the bit rate for your selected video stream.

When adding an ONVIF camera, the following parameter is user configurable.

- **Encoding interval -** This corresponds to the number of frames divided by the encoded frames. When the value of encoding interval is "1", it means that all frames are encoded.

When adding a generic camera, the following parameters are user configurable.

- **The same as recording -** Apply the same settings you have made in the Recording section.
- **Test** – Click this button to test the connection with the generic camera. Make sure you have supplied all the correct network information of your IP camera before testing connection.

Delete Camera

Select a camera from the list and then press the [Delete Camera] button.

Edit Camera

You can modify the settings of your cameras on the list by selecting one camera from the list and press [Edit camera] button. You cannot edit cameras whose status shows off-line.

Recording Setup

Here you can manage recording schedules.

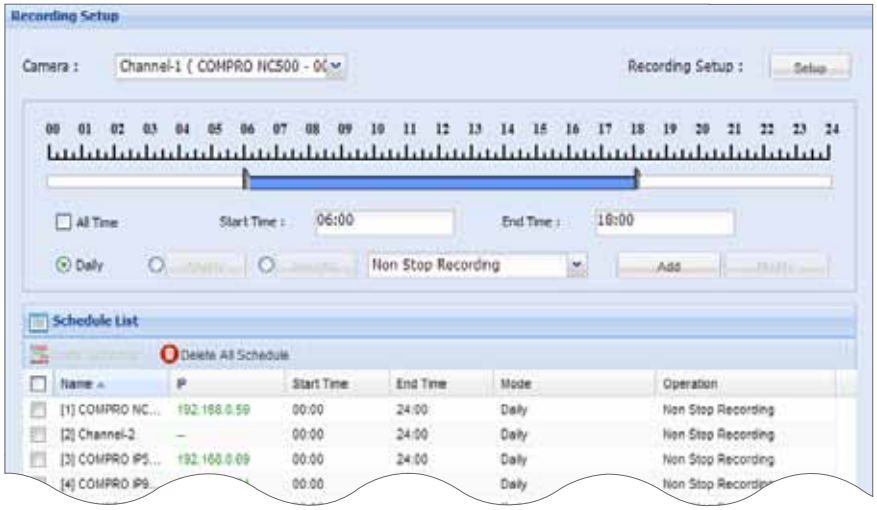


Figure 7-7. Recording setup

The [Setup] button in the upper-right corner provides the setting for disk volume, data keeping and alarm recordings. It determines the recording settings for the selected camera channel. After pressing the [Setup] button, you will see:

- **Recording Settings** – Select the disk for setting video recording from the drop-down list. Click [Use Max Capacity] to allow the use of all available disk space on the selected disk volume for recording. Click [Size Limitation] and enter a value to set a limit on how much storage space can be used for the selected disk. The Data Keeping options provides control for storage handling.
- **Alarm Recordings** – Set your recording preference for alarm-triggered recording.

Add New Recording Schedule

To add a new recording schedule:

1. Select a camera from the drop-down list.
2. Press [Setup] button to configure recording settings for the selected channel.

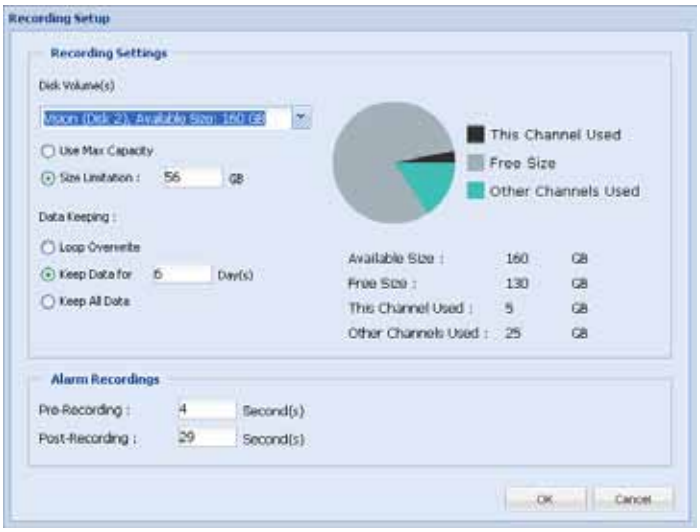


Figure 7-8. Recording settings

- **Disk Volume** – Select the disk for setting video recording from the drop-down list.

- **Use Max Capacity** – Allow the NVR to use all the available disk space for recording.
- **Size Limitation** – Set a limit on how much space can be used for storing recording data. The number cannot exceed the available space.
- **Loop Overwrite** – Set for the system to overwrite the old files on the disk automatically when the system has used roughly over 90% of available disk space, and constantly maintaining a 5-10% of free space on the disk.
- **Keep Data for... Day(s)** – Set the number of days the recordings will be retained on the disk when there are still sufficient storage space. If the system is approaching the space limit for the disk volume, it will not keep the data for as long as specified here in order to stay within the limit.
- **Keep All Data** – Set to retain all the recordings on the disk, and when the disk is full, stop any further recording action.
- **Pre-recording** – Determine how many seconds of video the system records immediately preceding the occurrence of a triggered event.
- **Post-recording** – Determine the recording duration for each triggered event. If after the system starts recording for one triggered event, a second event is triggered, then from the time point of the second event's occurrence, the system will extend the recording duration for the number of seconds specified here to record the second event.

3. Set the start time and end time, or check [All Time] box for the action time of your recording schedule. You can also drag the slider to set the action time.

Figure 7-9. Recording settings

4. Set the repeat mode as [Daily] or [Weekly] and set the repeat day in a week, or set it as [Specific] and choose one specific day from the calendar.
5. Select the operation mode from the drop-down list. The content of the list depends on the capability of the selected camera. The recording operation can be event-based, such as motion, tampering, schedule, audio, IO, or non-stop recording (during the action time). If you are adding a recording schedule for an ONVIF-conformant camera or a generic camera, "Non-Stop Recording" is the only available option.
6. Press the [Add] button. Then choose [Yes] to confirm the addition. Then a message indicating successful adding will pop up.

Modify Recording Schedule

To modify an existing schedule:

1. Repeat step 1 to 5 in "Add New Recording Schedule."
2. Select an existing schedule from the schedule list, and press [Modify]. Then choose [Yes] to confirm modification.
3. A message indicating successful modification pops up. The new settings has been updated into the selected schedule.

Delete Recording Schedule(s)

To delete a specific recording schedule, check one item from the schedule list and press [Delete Schedule]. To delete all the items in the schedule list, press [Delete All Schedule] button.

Events and Notifications Setup

Here you can configure the event and notification function for a camera connection.

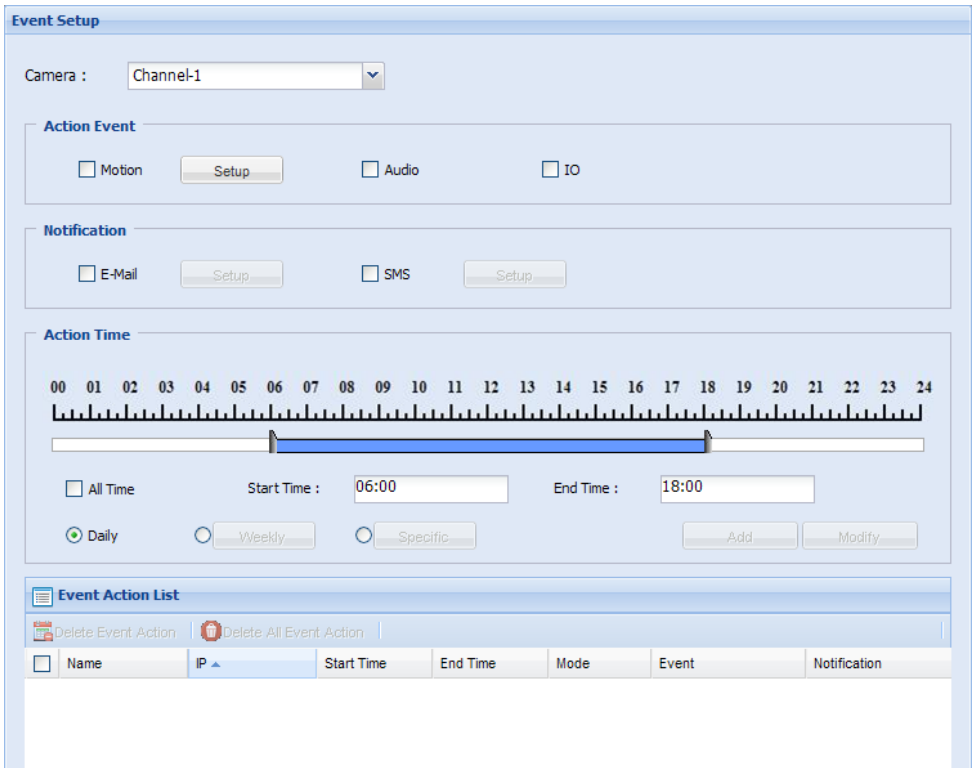


Figure 7-10. Events and Notifications Setup

If you are using Compro IP cameras, the NVR can automatically configured the event detection and notification function of your Compro IP cameras for you in accordance with the event actions you set up on the NVR. After you have successfully created event actions, NVR will send out event notification per user configuration once cameras detect events.

Add an Event Action

To add new event action on the NVR, you must first select a camera from the drop-down list and configure the type of event trigger, the notification method, and action time. After you complete the following settings, press the [Add] button and a new event action item will be created. The event setup function is not available to ONVIF-compliant cameras and generic cameras.

1. **Action Event** - Select the type(s) of event to that will trigger a response action. The options displayed here are the event types supported by the Compro NVR. For the response action(s) to be taken properly, the camera must support the type of event trigger (motion, tampering, etc.) you selected, and the event trigger(s) you selected must also be configured on the Compro IP camera. Available options: motion, tampering, schedule, audio, IO. You must select at least one action event.

2. **Notification** - Choose the type(s) of notification that will be sent in response to the occurrence of an event. For the notification to be sent properly, the selected camera must also support the notification(s) you selected. Available notifications:

2.1 E-mail - Send an email to a designated recipient. To configure email notification, check [E-Mail] box and press [Setup] button, and then the "E-mail Setup" window will pop up. Afterwards, select a default webmail platform from the drop-list and enter your user name, password, and the mail contents. You can also set a user-defined webmail platform and provide the following information.

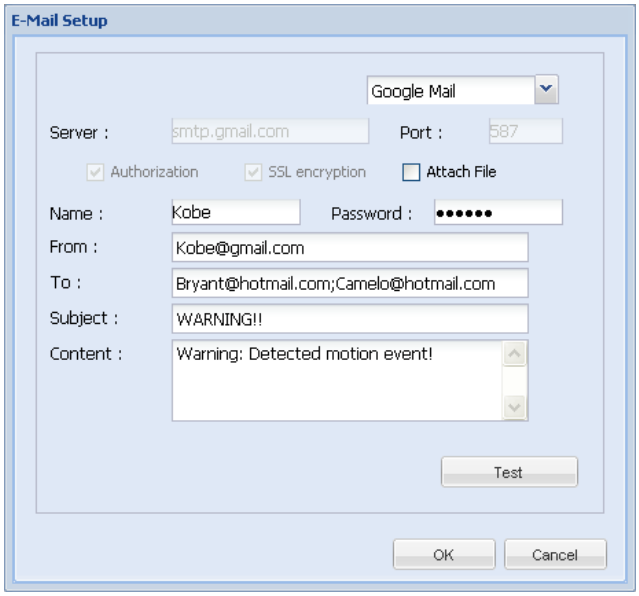


Figure 7-11. Email setup

- **Server** – SMTP server address for user-defined Email platform.
- **Port** – Connection port for user-defined Email platform.
- **Authorization** – Check this if your SMTP server requires user authorization.
- **SSL encryption** – Check this if your SMTP server supports SSL encryption.
- **Attach File** – Check this option to attach a event snapshot in the Email message.
- **Name / Password** – The user name / password of your Email account.
- **From** – Sender's name.
- **To** – Click on the "To" data field to enter recipient address(es).
- **Subject** – The subject of the Email notification to be sent.
- **Content** – The content of the Email notification to be sent.

When all set, press the [Test] button to send a test Email to the recipient(s). Then press [OK] to confirm the setting.

2.2 SMS - Send a SMS message to designated mobile phone number(s) when an action event is triggered. To configure SMS notification, check [SMS] box and press [Setup] button, and the "SMS Setup" window will come up. Then provide the following information.

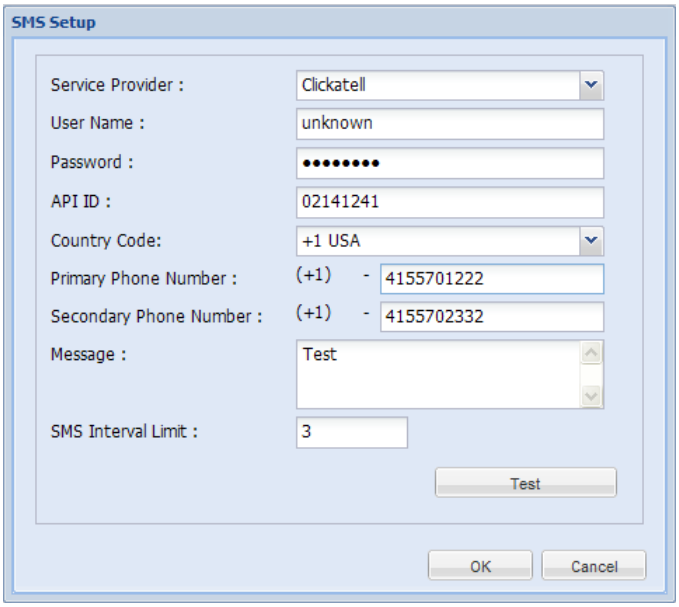


Figure 7-12. SMS setup

- **Service Provider** – Here shows the supported SMS gateway service provider. You must have enough credit at Clickatell, the service provider, in order to send SMS message. For account registration and message credit purchase, visit Clickatell website.
- **User Name / Password** – The user name and password you used to register the SMS gateway service.
- **API ID** – API ID provided by the service provider (Clicktatell).
- **Country Code** – Select the recipient's country / region.
- **Primary Phone Number** – Enter the main recipient's mobile phone number.
- **Secondary Phone Number** – Enter the secondary recipient's mobile phone number.
- **Message** – Edit the content of the alert message. The number of characters is limited to 100.
- **SMS Interval Limit** – Set the sending interval of notification messages between the first triggered event and any ensuing event.

When all set, press the [Send Test SMS] button to send a test message to the recipient(s). Then press [OK] to confirm setting.

3. **Action Time** - Set the start time and end time, or check [All Time] box to enable event notification all day. You can also drag the slider to set the action time. Then set the repeat mode to be [Daily] or [Weekly], or set it as [Specific] and choose one specific day from the calendar.

Modify an Event Action

To modify an existing event action, select an event action from the list, make the desired changes regarding to "Action Event", "Notification", or "Action Time", and press [Modify].

Delete Event Action(s)

To specifically delete an existing event action, on the "Event Action" list, check the checkbox before an event action , and press [Delete Event Action] button. To delete all the event actions, simply press [Delete All Event Action] button.

System Information

Here provides access to information on system status, system loading, and disk usage.

System Status

The system status is divided into 5 sections: Basic, Network, NVR, Hard Disk(s), and USB device.

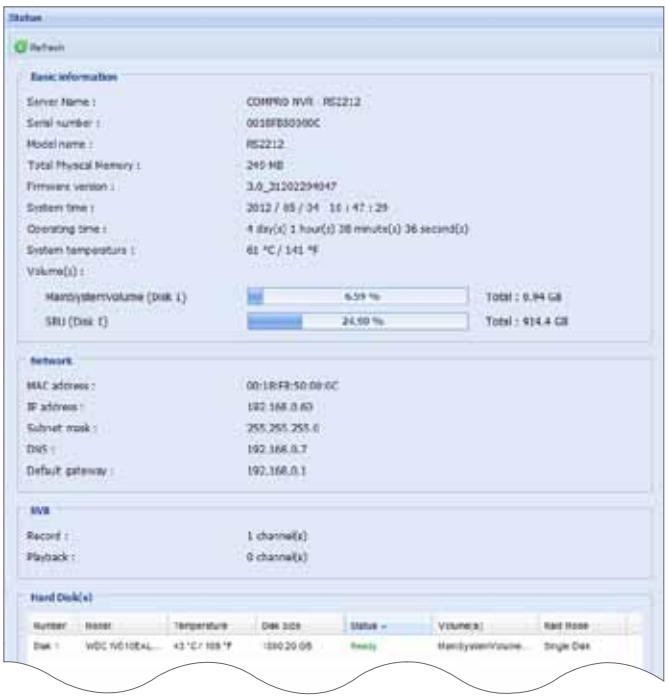


Figure 7-13. System status page

Basic Information

Basic information section includes the following items.

- **Server Name** – Device name.
- **Serial Number** – Hardware serial number.
- **Model Name** – Model name.
- **Total Physical Memory** – The size of physical memory.
- **Firmware Version** – Firmware version.
- **System Time** – Current time of NVR system.
- **Operating Time** – The total time in operation
- **System Temperature** – Current system temperature
- **Volume(s)** – The percentage of used disk space.

Network

Network information section includes the following items.

- **MAC address** – Hardware MAC address.
- **IP address** – The current system IP address.
- **Subnet Mask** – Subnet Mask.

- **DNS** – Domain Name Server address.
- **Default Gateway** – Default gateway.

NVR

NVR information section includes the following items.

- **Record** – The number of channels being recorded by the NVR.
- **Playback** – The number of channels being played back on the NVR.

Hard Disk(s)

This section shows the disks installed in NVR and their current status.

USB Device

Here displays the USB storage devices connected to the NVR and their total capacity.

System Loading

Here displays the information on CPU loading and network loading.

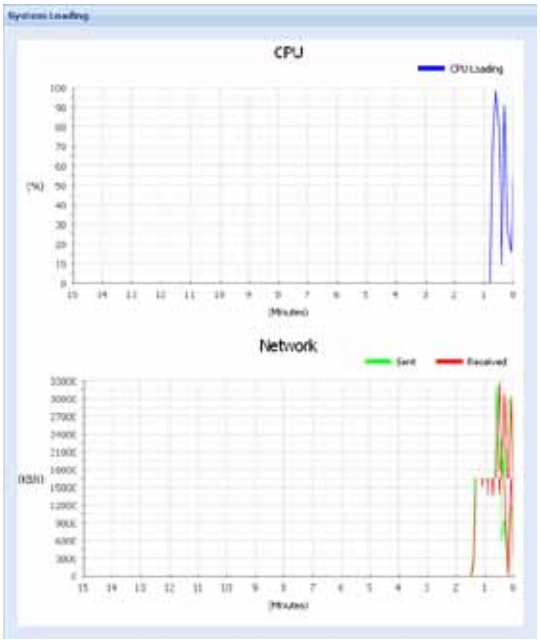


Figure 7-14. Loading chart

System Setup

Here it provides access to system settings.

Language

Change the display language of user interface here.

Figure 7-15. Change display language

Date & Time

Current Time
Here displays the NVR's current system time.

Time Zone
Select your time zone from the drop-down list.

Time Setting
Configure the advanced time setting here. You can click on [Manually] and manually set the date and time by selecting from the drop-down menu. Or click on [Synchronize with NTP server] and choose your synchronization frequency and select a NTP (Network Time Protocol) server from the list to allow the system to automatically Synchronize system clock with the clock of the NTP server. Then press [Apply] to save changes.

Network
Make advanced network settings here.

Server Name
The server names entered here is the name of the NVR displayed under "My Network Places" on your Windows system.

Status
The status section shows a summary of the NVR's network status.

LAN
You can choose to let the system obtain IP address via DHCP (recommended), or choose to use the manually inputted static IP address, and then configure the DNS server address and default gateway address manually. If you wish to use PPPoE dial-up connection to connect the NVR to the Internet, please go to [Surveillance Setup] > [Events and Notifications Setup] and check [E-Mail] checkbox. Then return to the network settings page, and click [Enable PPPoE connection] and enter the valid user name and password. Then press [OK] to save the changes. The system will inform user of its IP address via Email.

In addition, you can opt for using jumbo frame (which allows sending / receiving of Internet packets containing large payload) by selecting a MTU (Max. Transmission Unit) value from the drop-down list.

Note:
To take advantage of jumbo frame feature on the NVR, the jumbo frame feature must also be supported and enabled on your Ethernet switch and network camera. If you enable jumbo frame of the NVR in a network that doesn't support jumbo frame, the NVR will automatically switch to sending standard-sized frames.

Server Port
Allows you to configure your HTTP port and RTSP port. Normally the default port number are recommended for use. However, when you attempt to install a second Compro NVR on your LAN network, it is recommended to change the HTTP and RTSP port on each additional NVR installed manually, so each one of them will use a different port. E.g. changing the HTTP and RTSP port for the 2nd device to 81 and 555 respectively and accessing the 2nd device by logging on to http: / / 61.220.20.16:81.

DDNS

Click here to enable the DDNS (Dynamic Domain Name Service) service if you are using floating IP and want to link to your NVR using an URL. Compro's free iDDNS service is the recommended and default DDNS service here.

Figure 7-16. DDNS setup

Note:

- The iDDNS is a free DDNS (Dynamic Domain Name Service) service offered by Compro. If you are using floating IP, you can apply for DDNS service to create a hostname that links to your home or office IP address, which provides easy-to-remember URL for quick access to your device. After successfully creating the iDDNS address name, you can then enter "http://(the address name you input).iddns.org in the location field of your browser to access your device. If your LAN network and router have a firewall to prevent hacker attacks, you need to configure the HTTP port for connection from external network on your router. If you set the HTTP port as "2001" for your device, you need to attach the port number to your device's address, i.e. http://xxx (entered by you).iddns.org:2001.
- Compro's iDDNS server will automatically delete addresses that haven't been updated for more than 3 months.

Power Management

Here it allows you to restart / shutdown the NVR, wake up the NVR on LAN, change behavior when power resumes, power on / off NVR on scheduled time, and hibernate hard drives. Press [Apply] after you make any changes.

Figure 7-17. Power management page

Restart / Shutdown

Press [Restart] or [Shutdown] to restart or shut down the NVR.

Schedule

- **Enable scheduled power on** – Power on the NVR on the specified date and at the specified time (when the AC power supply is not disconnected).
- **Enable scheduled power off** – Power off the NVR on the specified date and at the specified time.

HDD Hibernation

You can reduce the power consumption of the NVR by configure the internal and external HDDs to go into hibernation mode after a period of inactivity. For any changes made, press [Apply] button to save the settings.

Reset

Here it allows you to reset the device back to default settings, which will clear all user configurable settings but still keeps recording data. After the NVR system is reset successfully, you may have to re-log in to the NVR.

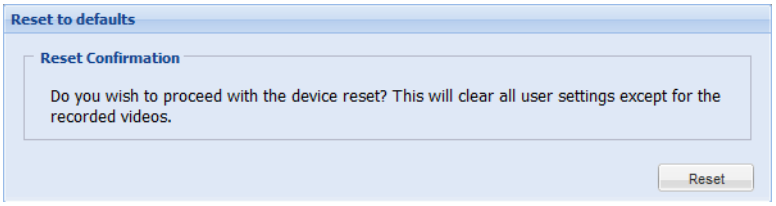

Reset to defaults
Reset Confirmation
Do you wish to proceed with the device reset? This will clear all user settings except for the recorded videos.
Reset

Figure 7-18. Restore options

Firmware Update

New firmware of this Compro NVR will be made available on www.comprosecurity.com. After you have downloaded a newly released firmware, press [Browse] to locate the new firmware file and then hit [Upload] but-

ton. Then wait patiently for the update to complete.

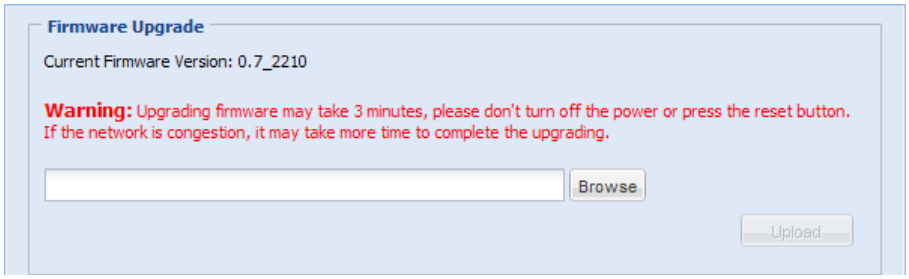

Firmware Upgrade
Current Firmware Version: 0.7_2210
Warning: Upgrading firmware may take 3 minutes, please don't turn off the power or press the reset button.
If the network is congestion, it may take more time to complete the upgrading.
Browse
Upload

Figure 7-19. Firmware update

Caution!

- Do not power off the NVR while the firmware update is in progress.
- Do not import firmware file that is not supplied for this NVR by Compro.

Storage Setup

Storage setup allows you to manage the system volume of the NVR as well as all the installed hard drives.

Volume Management

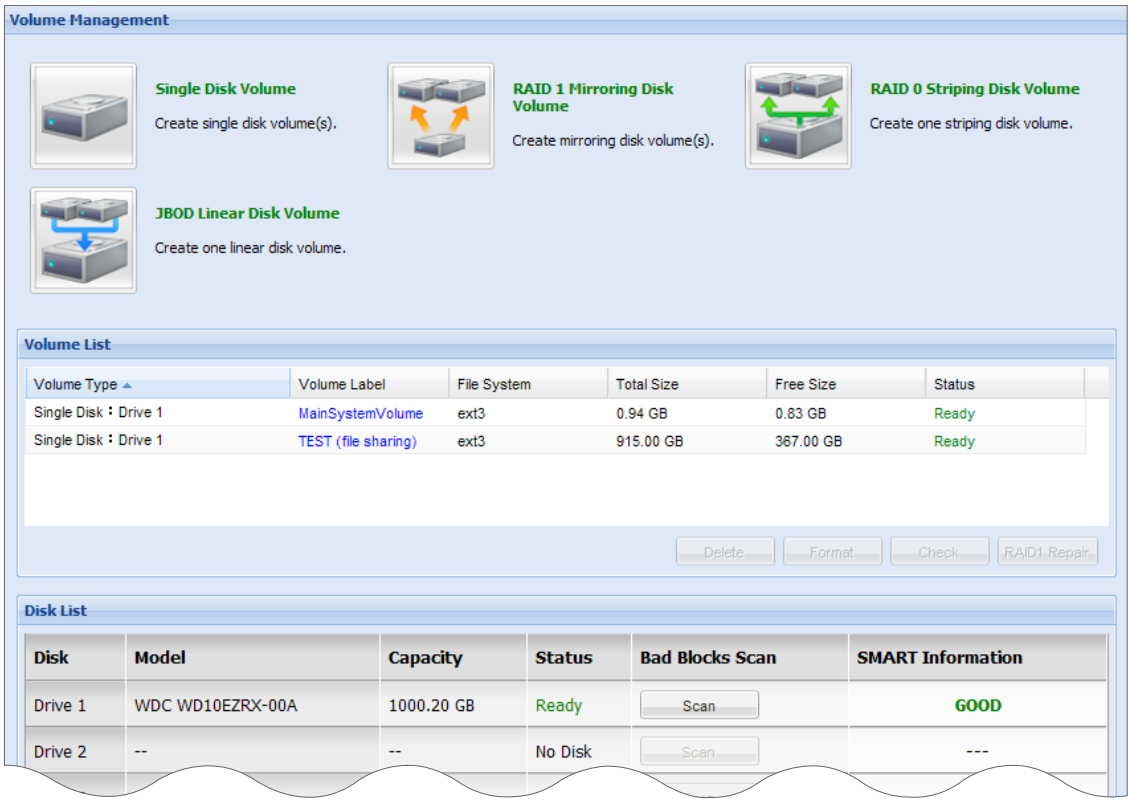
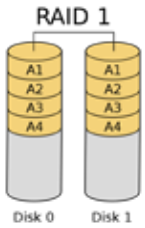


Figure 7-20. Volume management page

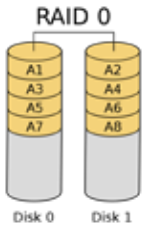
Volume Management

- **Single Disk Volume** – This allows you to create a single disk volume using all the space on one selected physical disk. After clicking on the "Single Disk Volume" icon, select a physical disk from a list of disks yet to be partitioned. Then click [Next] and input the volume label. The newly created disk volume will be quick formatted automatically.

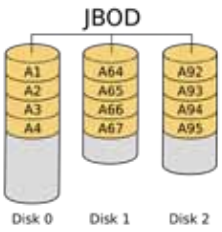
- **RAID-1 Mirroring Disk Volume** – This allows you to create a RAID-1 mirroring disk volume. Creating a RAID-1 volume requires two individual disks of similar capacity. Within a RAID-1 disk volume, the exact same data written on one disk is written to a second disk to create a mirror image. After clicking on the "RAID-1 Mirroring Disk Volume" icon, select two physical disk from a list of disks yet to be partitioned. Then click [Next] and input the volume label. The newly created disk volume will be quick-formatted automatically.



- **RAID-0 Striping Disk Volume** – This allows you to create a RAID-0 striping disk volume. Creating a RAID-0 volume requires two individual disks of similar capacity. Within a RAID-0 disk volume, data is divided into blocks and spread across multiple hard drives. After clicking on the "RAID-0 Striping Disk Volume" icon, select two physical disks from a list of disks yet to be partitioned. Then click [Next] and input the volume label. The newly created disk volume will be quick-formatted automatically.



- **JBOD Linear Disk Volume** – Creating a JBOD (Just a Bunch of Disks) disk volume basically combines all the volume of selected hard drives into one huge disk volume. Within a JBOD disk volume, data is written to a group of disks sequentially. After clicking on the "JBOD Linear Disk Volume" icon, select two or more physical disks from a list of disks yet to be partitioned. Then click [Next] and input the volume label. The newly created disk volume will be quick-formatted automatically.



Current Disk Volume Configuration: Logical Volumes

All the logical disk volumes available to the NVR are displayed here. To delete a disk volume, select one from the list and press the [Volume Deletion] button and press [Yes] to confirm. You can also perform quick format on the selected disk volume by pressing [FORMAT NOW], or perform disk check to fix any file system errors by pressing the [Check Now] button. When a RAID-1 disk volume is found to be invalid or faulty (for whatever reason), the system will report its status as "Degraded"; in this case, select the faulty RAID-1 disk volume and press the [RAID-1 Repair] button, and the system will attempt to fix the faulty RAID-1 volume by dumping the data from the working disk volume onto another disk volume.

Current Disk Volume Configuration: Physical Disks

All the physical disks installed in or connected to the NVR externally are listed here. You can perform scanning of bad sectors on any of the disk by pressing the [SCAN NOW] button, or check the S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) information reported by each individual hard disk drive.

Hard Disk S.M.A.R.T

The "Hard Disk S.M.A.R.T" page lets your check disk information reported with the S.M.A.R.T feature. Select a disk from the list, and then you are able to check disk information, S.M.A.R.T information, as well as perform quick and extended S.M.A.R.T test.

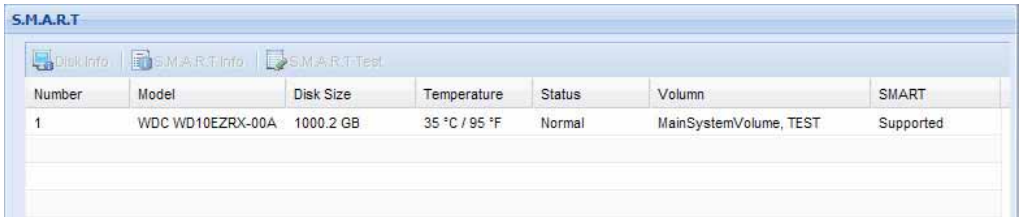


Figure 7-21. S.M.A.R.T information

File Sharing

Windows Network Neighborhood

Check [Enable file service for Microsoft networking] box to enable Microsoft file sharing service on the NVR, so that your NVR can be seen in "My Network Places" on your Windows machine. The text you enter for server description and workgroup will be used to identify your NVR in My Network Places. If you want to use Windows file service to access your NVR, please enter "\\192.168.0.xxx\ user account" into the address bar of your Windows system. For instance, input "\\192.168.0.100\admin".

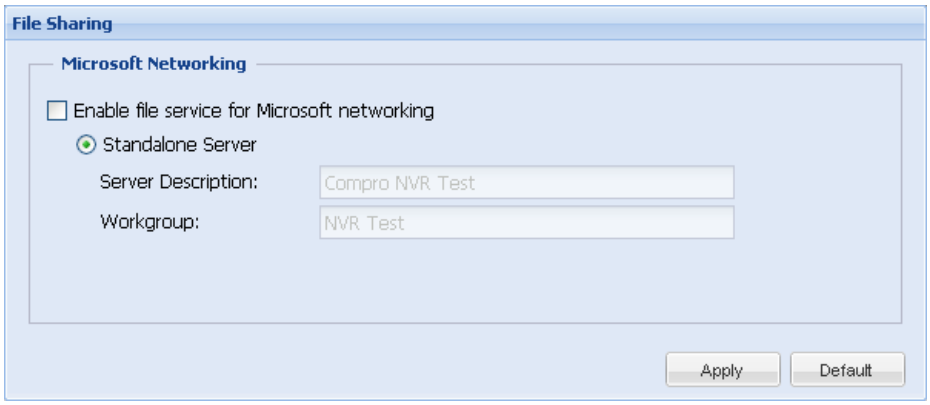


Figure 7-22. File sharing configuration

Important:
On this NVR, 80% of available disk space is allocated to storing video recordings, and the remaining 20% is allocated to storing the user data of "My Network Places" (different user account will have different folder on the disk). The space allocated to video storage cannot be used by "My Network Places." For instance, when you have installed one 3TB hard drive in the NVR, the available space for storing video recordings is around 2.4 TB (3TB * 80% = 2.4 TB).

FTP Server (FTP)

The NVR system contains an embedded FTP server that allows you to access the recordings stored on your NVR via a FTP client from any network-connected computer. FTP server page lets you switch on / off the FTP service on the NVR system, as well as configure server settings.

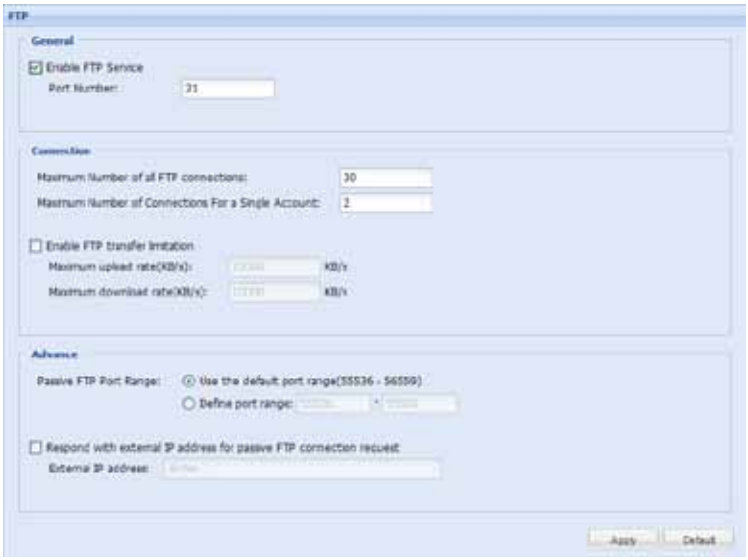


Figure 7-23. FTP server configuration

General

Check [Enable FTP Service] box to enable the FTP service.

Connection

Configure the maximum number of FTP connections allowed to be established with the FTP server, and also the maximum number of connections allowed to be established by a single account at the same time. You can also set a download / upload speed limit on the NVR end by checking the [Enable FTP transfer limitation] option and input the desired speed limit.

Advanced

Here you can determine the passive FTP port range by opting for using the default port range or inputting your own port range. After you have configured the port range, ensure that the port range you specified here is also opened on your router or firewall. You can also check [Respond with external IP address for passive FTP connection request] and input the WAN IP address of your NVR or the WAN IP address of your router (when you NVR is behind a router), so the FTP server can be connected by a remote FTP client over the Internet.

Note:
In the active FTP mode, the FTP client opens a port and the FTP server initiates connection to this port. In the passive FTP mode, the FTP server designates a certain port range that allows the FTP client to connect to. In other words, when using passive FTP mode, the FTP client is responsible for establishing (command and data) connection with the FTP server.

User Setup

User Management

The User Management section allows you to add/edit/delete users of this NVR as well as to import and export user list.

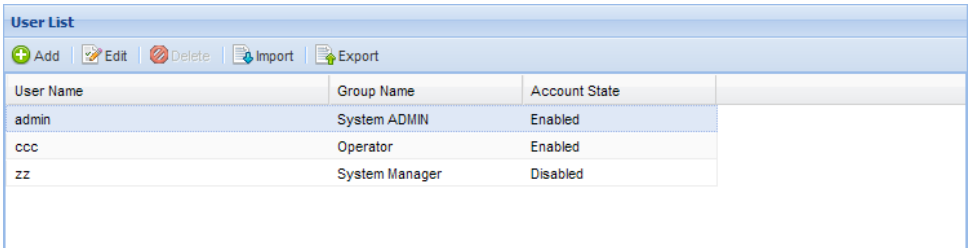


Figure 7-24. User management

Add a User

To add a user, simply push the [Add] button and then follow the steps below.

1. Input the basic information into the following fields.

Field / Option	Description
User name	The user name.
Description	The description showed in the "Description" field on the user list screen.
Email	The complete email address.
Password/Confirm password	Enter the password and re-enter again to confirm.
Disallow the user to change account password	When this option is checked, this user will not have the permission to change password.
Disable this account	If the user group you belong to is granted enough rights, you can disable this newly created account for now and enable it later. After enabling this option, you can also choose to disable this account straightway or choose to disable this account automatically after a specified date.

Table 7-1. Basic user information window

2. Click [Next] and select a user group where this newly added user will be added to. The available user groups for this NVR are defined as follows:
   - **System ADMIN** – System Administrator has maximum privileges.
   - **User ADMIN** – User Administrator has the same privileges as the System ADMIN. However, System ADMIN can control User ADMIN.
   - **System Manager** – System Manager's privileges are lower than that of User ADMIN. Using this permission, you can directly enter the system setup page to make configuration changes.
   - **Operator** – Operator's privileges are lower than that of User ADMIN (to complement System Manager). Using this permission, you can only access the LiveView and Playback page.
   - **User** – User has the lowest privileges. Using this permission, you can only access the LiveView page.

	LiveView	Playback	Setup	Note
System ADMIN	√	√	√	Only 1 account
User ADMIN	√	√	√	Multiple accounts
System Manager			√	Multiple accounts
Operator	√	√		Multiple accounts
User	√			Multiple accounts

Table 7-2. Available user groups

Also, different user group has different user rights. Listed below are their differences in details.

Rights	User Administrator	System Manager	Operator	User
Import / Export user list	YES	NO	NO	NO
System administration	YES	YES	NO	NO
Access playback page	YES	NO	YES	NO
Access LiveView page	YES	NO	YES	YES
Control PTZ	YES	NO	YES	NO
Receiving audio data	YES	NO	YES	NO
Manual Recording	YES	NO	YES	NO
Control I/O devices	YES	NO	YES	NO
Take snapshot	YES	NO	YES	YES
Broadcasting via mic	YES	NO	YES	NO

Table 7-3. User rights table

3. Configure access rights on each available camera for this user. When all set, press [Finish] to complete the adding operation.

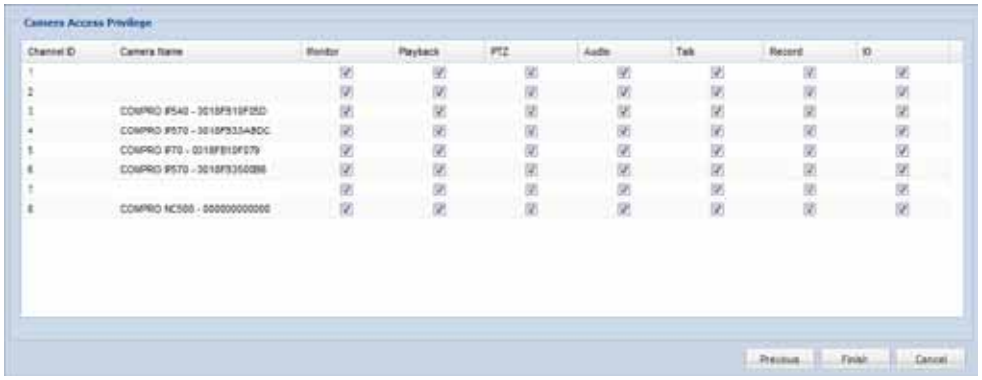


Figure 7-25. Camera access rights window

Edit a User

To edit an existing user of the NVR, select a user from the User List and hit the [Edit] button. Then make desired changes on basic information, group setting, camera access rights and press [Finish] to save the changes.

Delete a User

To delete a user from the NVR system, select a user from the User List and hit the [Delete] button.

Import User List

To import a saved user list, hit the [Import] button and when the "Import" window is displayed, press [Browse] to locate the saved user list on your PC. Then press [OK] to import. Check the [Over write the duplicate users] if you want the NVR to overwrite the user on the list when there is another identical user name in the imported user list.

Figure 7-26. Import user list

Export User List

To export current list, press the [Export] button and then select a destination to save the list on your local viewing PC.

Logs & Statistics

System Event Logs

System Event Logs allows you to check all the system logs. Besides displaying logs of all event type, you can also filter the displayed logs by selecting a log type from the drop-down list, or by specifying a time period. The [Save] button in the lower-right corner will allow you to export the log file and save it onto your viewing PC.

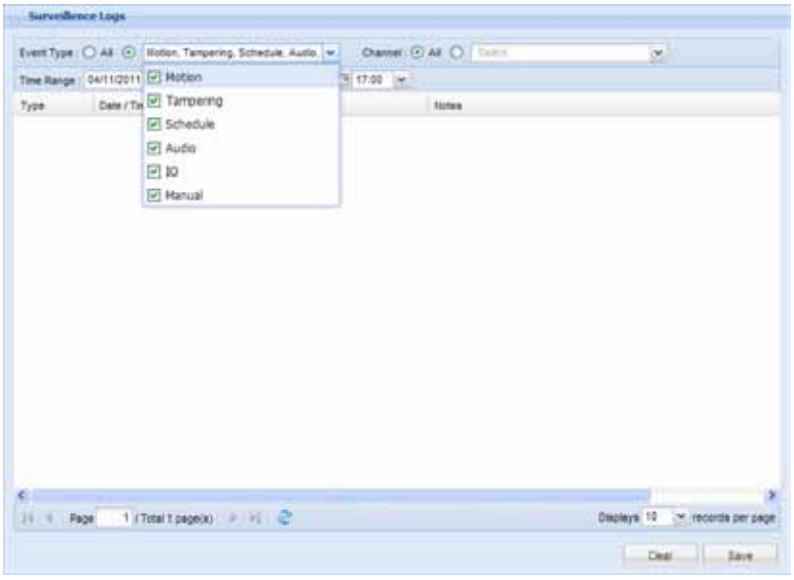


Figure 7-27. System event logs

Surveillance Logs

Surveillance log shows the date / time, event trigger and channel information of a recording operation. Besides displaying all surveillance logs, you can also filter the displayed logs by selecting certain event types. Or filter the displayed logs by specifying a camera channel. Press [Clear] if you wish to clean up the logs here. The [Save] button in the lower-right corner will allow you to export the log file and save it onto your viewing PC.

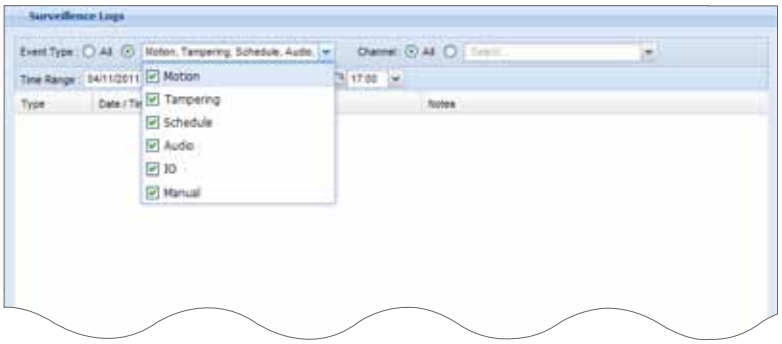


Figure 7-28. Surveillance logs

Historical Users List

You can check the user access logs here. The "Historical Users List" displays all the users in the past that had accessed the NVR system via the network. You can filter the displayed logs by specifying a time period. Press [Clear] if you wish to clean up the logs here. The [Save] button in the lower-right corner will allow you to export the log file and save it onto your viewing PC.

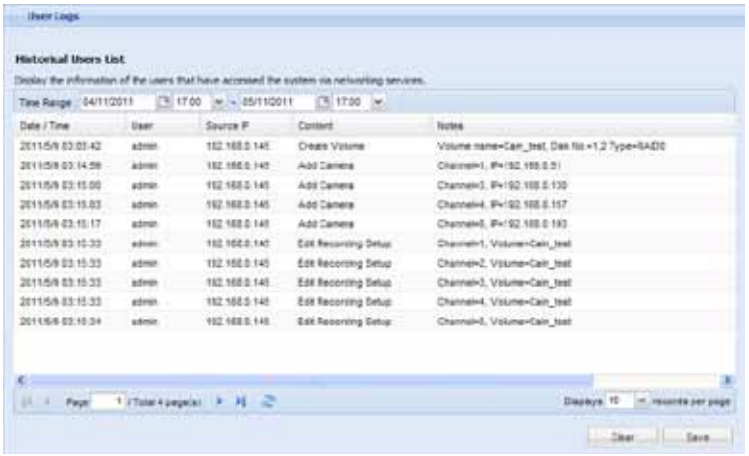


Figure 7-29. Historical user list

Backup

One Touch Backup

You can configure the backup behavior upon pressing the one-touch backup button on the NVR's front panel. The setting page allows you to turn on / off the one-touch backup function, as well as configure the number of days of data to be backed up. This page also provide real-time status of the backup operation.

To disable the automatic one touch backup feature, deselect the “Enable the front backup button" option. Then no backup operation will be performed upon hitting the one touch backup button on the front panel.

USB One Touch Copy
USB One Touch Copy
Enable the front backup button
Backup the last 7 days of recording to the front USB drive.
Note: The USB LED blinks when data backup to an external device is in process. The USB one touch copy button will be disabled temporarily. If you press the button during the data transfer process, the server will beep 1 long and 2 short beeps to alert you the button is disabled. Please wait for the backup to finish and the USB LED to stop flashing, and then use the USB one touch copy button again.
Current Operation: -
Estimated Time: -
Apply

Figure 7-30. USB backup configuration

On the other hand, if you choose “Backup the last 1 day”, the NVR will back up recordings made between 0000 hours of the day and the current time. For instance: 0000 hours, Aug 9 ~ 1000 hours, Aug 9.

And if you choose “Backup the last 2 days”, the NVR will back up recordings made between 0000 hours of the previous day and the current time. (For instance, 0000 hours, Aug 8 ~ 1000 hours, Aug 9.)

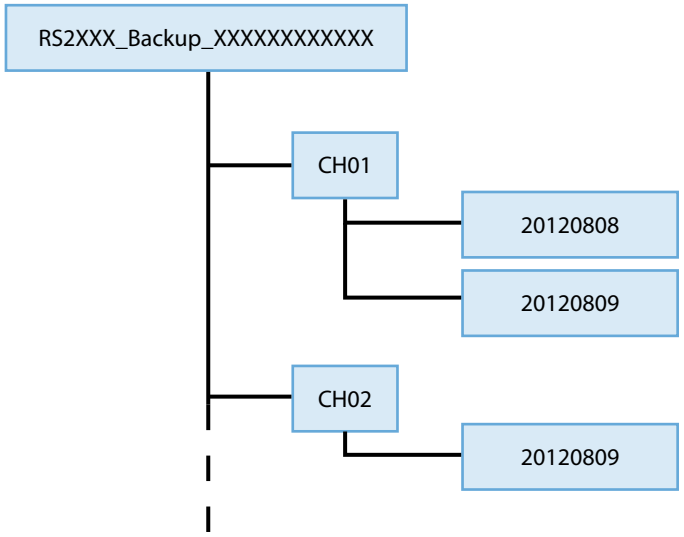
Note:

- The one-touch backup button will become temporarily inactive when data backup is already in progress.
- The one-touch backup button will only back up data onto the storage device connected to the front USB port.
- The system will beep 3 times (1 long, 2 short) when insufficient free space on the USB storage device results in backup failure.
- The first backup operation will be a full backup that could take a while. After a full backup has been completed, it will be an incremental back-up (which only backs up files that have been different) when you run backup again. The incremental backup only backs up files that have been different and therefore takes a shorter time.

Retrieve Backup Files

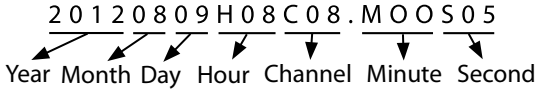
After you have successfully backed up recording files from the NVR to an external USB drive, you can then plug the USB drive into the USB port of your PC and browse the backup folder using Windows Explorer. Refer to the information below on backup file structure and naming rules.

1. The backup folder has the following file structure.



   The lowest subfolder, named in YYYYMMDD format, contains the recording backup files (in AVI format), and its name indicates the date the recording was made. The name of its parent folder indicates the camera channel the backup files belongs to.

2. The name of the backup file is composed of the following:



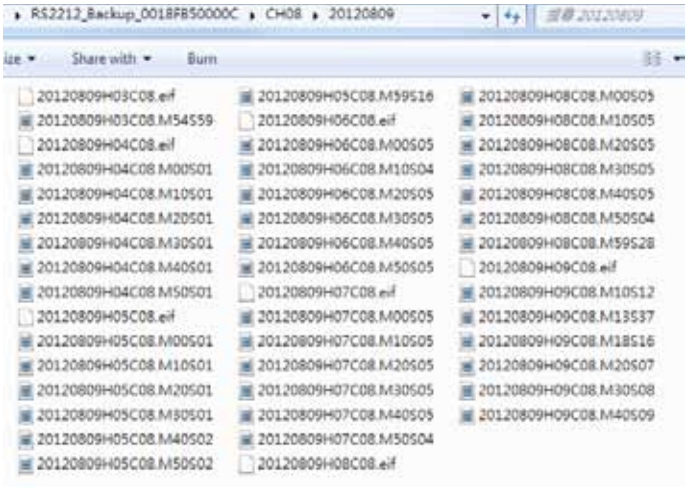


Figure 7-31. Example of backup folder

Multiple Server Management

Multiple Server Setup

Multiple Server Setup page is where users can manage this Compro NVR's web CMS function. With the web CMS function, in one browser screen, users on a remote viewing PC can not only monitor multiple (up to 30) camera channels which are being recorded separately on multiple NVR servers, but also search and play back video recordings stored on multiple NVR servers.

Note:

- A viewing PC equipped with Intel® Core™ i7-2700K or above CPU and Windows 7 is recommended in order to monitor 30 1.3-megapixel cameras at the same time.
- Using the web CMS function requires firmware version 3.0 or higher.

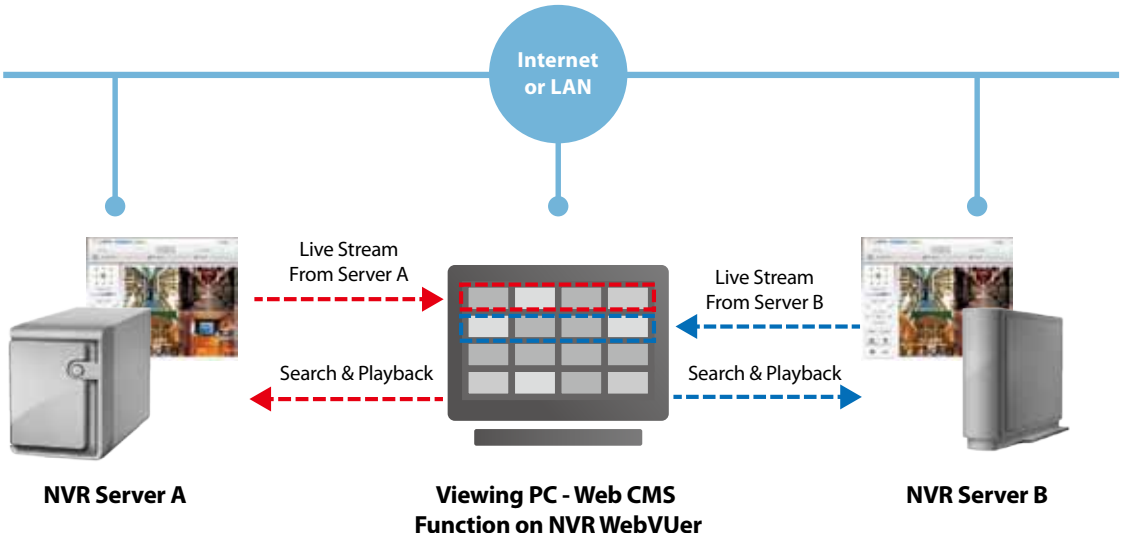


Figure 7-32. Web CMS function on NVR WebVUer

To start using the web CMS function, there must be two or more NVR servers on the server list. To add a second NVR to the list, click [Add] and then go ahead to put in the valid IP address, HTTP port number, administrator ID and password of the second NVR.

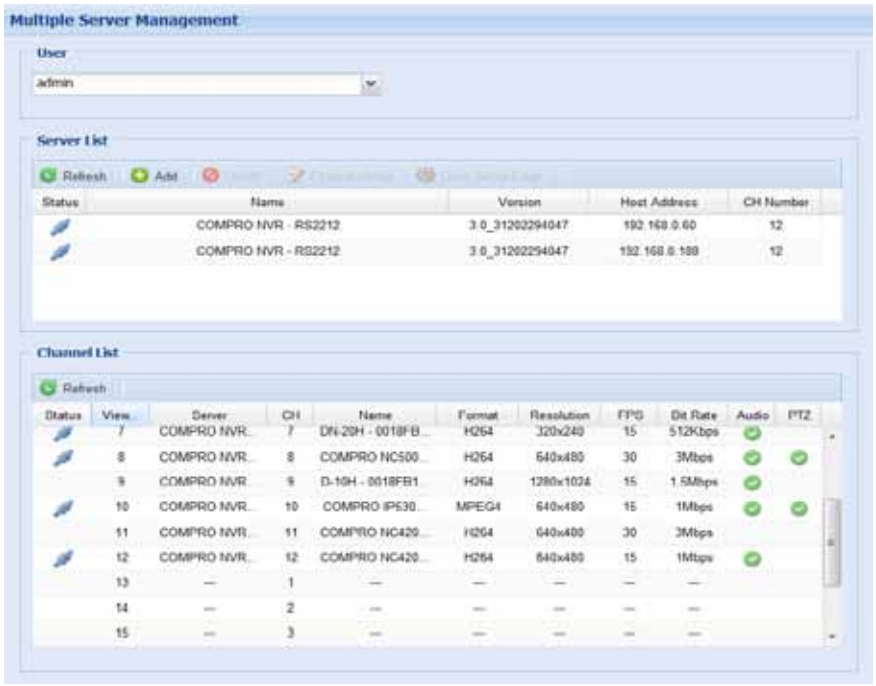


Figure 7-33. Multiple server management - server list

After that, select the second NVR's channels that you want to add to the channel list of the NVR you are setting up multiple server for. And click OK.

Figure 7-34. Channel selection

Chapter 8: Troubleshooting

Reset to the Factory Default Settings

If you forget your system password or if you feel your NVR has been acting weird, you can follow the steps below to reset the NVR to its default state:

1. Press the reset button (located at the rear panel) once; when successful, the NVR will beep once and you shall see the power indicator and LAN indicator go off.
2. The power indicator and LAN indicator come on again. The NVR begins the reboot procedure. Please wait patiently for the reboot procedure to complete.
3. The NVR beeps once again, indicating the system is now ready for use. Please run the iWizard setup utility again to re-configure the NVR.

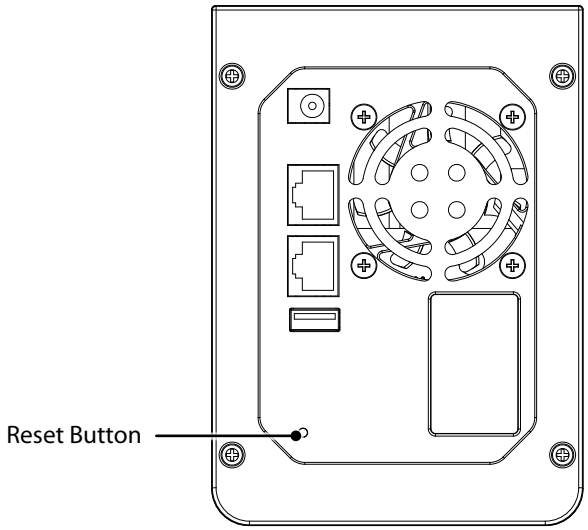


Figure 8-1. Reset button

Password Recovery Method

In case you ever forget the administrator password of your NVR, the administrator password can be reset to default by pressing and holding the reset button for three seconds. During the process, the NVR will sound two beeps, and its power LED will blink five times to indicate a success. Afterwards, use the default administrator password, which is "admin", to log in to the NVR again.

Important:
Using the password recovery method requires firmware version 3.0 or above.

Trouble with Remote Viewing on Browser

The NVR offers users the ability to monitor live video and play back recordings from a remote location through the Internet. If you encounter problems in remote viewing / playback, refer to the section below for preliminary troubleshooting.

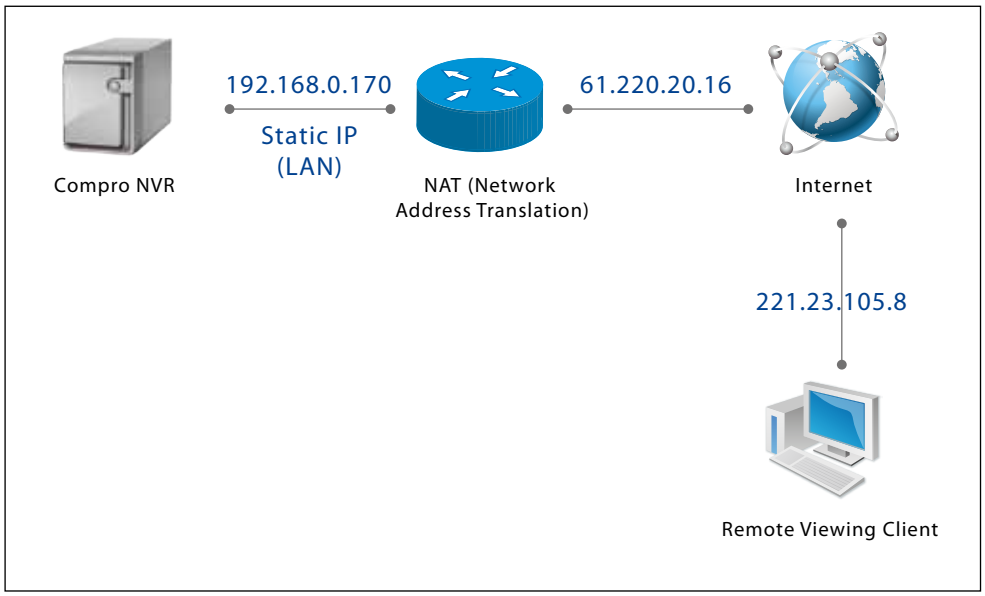


Figure 8-2. Remote viewing via web browser

The figure above shows a typical connection setup in which:

- the NVR has a static virtual IP address of 192.168.0.170
- the WAN IP address of the NVR is 61.220.20.16.
- the client (user) is trying to receive the video / audio stream remotely through the Internet.

To successfully view the live video streamed from the NVR through the Internet, you need to:

1. Ensure that the video stream bitrate stays within the bandwidth limit of your local network. You can check each camera connection's video quality setting by right-clicking on a camera channel and select [Information]. In general, the upload bandwidth of the Internet service your NVR and IP cameras are using should be greater than the combined video bitrate of all the active channels. If the combined video bitrate exceeds your upload bandwidth limit, you will experience stuttering video or black and blank screen.

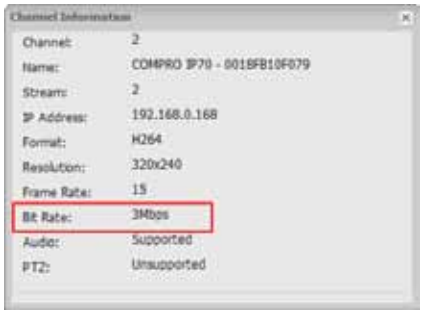


Figure 8-3. Channel information window

2. Check the ports used by the NVR in [Setup] > [System Setup] > [Network] and note down the HTTP and

RTSP server ports, in this case, ports 80 and 554 respectively.

3. Enable port forwarding on the router and allow traffic on ports the NVR is using. You may need to consult the manufacturer of your router for instructions on port forwarding / mapping setup. Note your router may require a reboot after port forwarding is enabled. The following figure exemplifies the settings you need to make in order to remotely view the NVR.

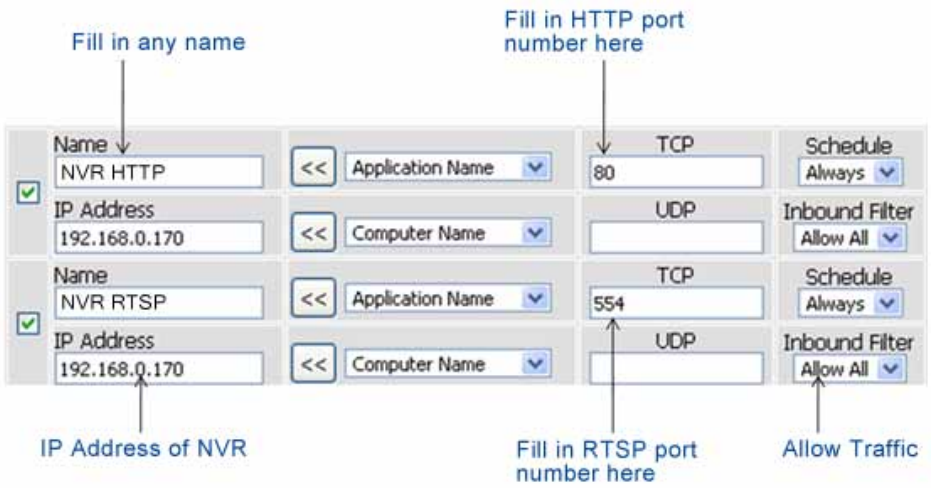


Figure 8-4. Port forwarding

Having taken the above steps, you should be able to log in to the NVR from a remote location by entering the DDNS address or the Internet IP address in the location field of a web browser (depending on your configuration). For example, in this case, you should enter "http://61.220.20.16:80" into the location field of Internet Explorer to access the NVR. (You can find out the Internet IP address by logging into the router's administration interface and check the Internet IP address the NVR has obtained.)

Important:
If you have multiple NVRs installed on a network, you will need to change the HTTP and RTSP port on them manually so each one of them will use a different HTTP/RTSP port – i.e. changing the HTTP and RTSP port for the 2nd device to 81 and 555 respectively and accessing the 2nd device by logging on to http://61.220.20.16:81.

Symptoms, Causes and Solutions

Listed below are some other frequently asked questions and their answers. Should your problems remain even after trying the suggested solutions, contact your local dealer or Compro Technology for technical support.

Symptom	Possible Cause / Solution
Problem logging into the NVR on the LAN using web browser.	**The NVR is not powered on.** Make sure the NVR has been powered on for over 1 minute and its LED status indicator is lit.
	The Ethernet cable is not firmly connected to the NVR and to the router / switch. Check if the RJ-45 Ethernet cable is securely connected to the 2nd Ethernet port of the NVR (the 2nd Ethernet port is the default port) and to the network router / switch. When the NVR has successfully established connection, the LAN status indicator appears green.
	The entered IP address is incorrect. Check if the IP address you entered matches the IP address of your NVR. Run the Compro iWizard to search for the NVR on your network, which then shall tell you the NVR's IP address on your LAN network. (Note if you are running Windows 7 / Vista, you need to run iWizard tool with system administrator rights. Simply right-click the iWizard icon on your desktop, and select "Run as administrator") Besides using iWizard, you can also log into your router's administration interface and check the devices being connected, their MAC ID and the corresponding IP address they've been assigned with (the NVR's MAC ID can be found on the product label). You may need to consult your router's user manual for login instructions.
	The viewing PC is not connected to the LAN network. Check if your viewing PC has a successful connection to the LAN network. You can open a command prompt window (by pressing Winkey + R and input "cmd" and hit OK) and then input "ipconfig" and press [Enter]. When your PC is connected to the network, it will display information on your IP address, subnet mask, etc.
	The same IP address has been provided to other devices on the LAN. When your NVR has a manually assigned IP address, another device that has the same IP address on your LAN network could result in abnormal or failed connection to your NVR. Reconfigure your NVR to obtain IP address via DHCP mode can avoid this problem. You can also log in to your router's administration interface to check all the connected devices and their LAN IP addresses, and look for any device whose IP address conflicts with other device.
	The entered user name and password is incorrectly set. Log in as system administrator and go to [Setup] > [User Setup] > [User Management]. Then check if you have the right user names and passwords. Should you forget the system administrator's ID and password, use the reset button at the back panel to reset to the default administrator ID and password. (Reset button only clears user configurable settings.)

Symptom	Possible Cause / Solution
Successful login to the NVR but no image is displayed	**The Compro ActiveX component is not installed or is blocked.** When you are viewing the live video on Internet Explorer, make sure you have installed and enabled Compro ActiveX component. Open your Internet Explorer browser and go to [Tools] > [Manage Add-ons] and check that you've got both the "Compro NVR LiveView ActiveX" and "Compro NVR Remote Playback ActiveX" control components registered and enabled. In addition, at the first time you log in to the live view screen and playback screen, two dialog boxes asking "Do you want to run this ActiveX control?" will pop up. Please hit [Run] twice to run both Compro ActiveX components.
	The channel being viewed is not configured with camera connection. Make sure the channel you are viewing has a valid camera connection. Go to [Setup] > [Surveillance Setup] > [Camera Setup] and check if a camera connection has been assigned to the channel. Having done that, return to the live view screen and press the right-most view type button on the top panel to view all the channels.
	Internet connection on the IP camera end is broken. Check whether the camera you are trying to view is still connected to the Internet. If you know the IP address of your IP camera, you can open your web browser and input its IP address to see if this IP camera responds.
Successful viewing on some channels but some channels cannot be viewed	**The NVR and your IP cameras are not located on the same subnet** When your NVR and your IP cameras are not located on the same subnet, your NVR will not be able to connect to the IP camera. A viable workaround is for the NVR to connect to the IP camera using camera's WAN IP address. Another solution is to configure port mapping / forwarding on the router the IP camera is connect to, so the access to the Internet IP address and the mapped ports of your IP camera is allowed. For information on port mapping / forwarding setting, consult the user guide of your router or visit portforward.com.
	The camera channel uses the inappropriate networking protocol When you are adding an IP camera connection to your NVR located on your LAN network, and the IP camera is located on the Internet (namely the camera is added with its WAN IP address), make sure you use TCP protocol for this camera connection. Using UDP connection in this case may result in blank screen for this channel.
	The NVR ActiveX components are outdated. If you have recently upgraded your NVR's firmware, you may try re-installing the NVR ActiveX components. First close all the browser windows, and then delete the entire "Compro NVR" folder found under "(OS Drive):\Program Files". (On 64-bit Windows, look for "(OS Drive):\Program Files (x86)" instead.) And log in to your NVR on your browser again to re-install the ActiveX.
Some buttons or view windows are displayed out of alignment in the browser	**Browser cache needs to be refreshed** Your browser could still be attempting to connect to all camera channels. Please wait for another while. If the problem persists, try pressing CTRL + [F5] to force a cache refresh on your browser.

Symptom	Possible Cause / Solution
Successful login on local network but having problem accessing from Internet.	**The entered hostname / WAN IP address is incorrect.** Make sure you have entered the correct hostname (if you use DDNS) or the correct Internet IP address of your NVR in the location field of your web browser.
	The LAN network is not connected to Internet. Your viewing PC needs to have access to the Internet when trying to view your NVR remotely. Equally, your NVR located on a LAN network also needs to have access to the Internet for it to be viewed remotely from the Internet. Check if you can browse the Internet on your LAN network where your NVR or viewing PC is located. If not, contact your network administrator for assistance.
	The NVR's WAN IP address has changed but yet to be updated into DNS cache. When using DDNS service, the information of your NVR's IP address and the domain name that IP address is linked to is stored in the DNS cache. The cache is used to retrieve the IP information by the DNS server which translates entered hostname into the NVR's IP address. Though the information is updated every few minutes (determined by the value of TTL, Time to Live), occasionally the DNS information has changed (e.g. your NVR acquires new IP) but the old information is still stored in the cache, resulting in connection failure. When this happens, try waiting a few minutes for the new IP information to be updated onto DNS server and then retry connection, or try to decrease the TTL value. If it still doesn't work, refer to other possible causes and solutions, or contact Compro or your local dealer for technical support.
	The router's configuration does not allow incoming traffic to the NVR. If you want to make your NVR located on a LAN network accessible over the Internet, you need to enable port forwarding on your router that your NVR is connected to, and allow incoming traffic on the ports your NVR is using (your router may require a reboot after port forwarding is set). Refer to the "Network Configuration Scenarios" section in the user manual for detailed information. If you don't know how to enable port forwarding on the router, consult your router manufacturer for instructions.
Video recording does not work properly.	**The hard disk drives are not installed properly.** Ensure that the hard disks are firmly installed in the trays and the levers on the tray are in their locked position.
	The hard disk drives may be damaged. Check if the HDD indicators comes on in red, which is an indication of possibly faulty disks. Also, try installing a new hard disk drive to see if recording works on a different hard disk. Should the problem persist, contact your local dealer or Compro for technical support.
Problem using DDNS service.	**The DDNS service is not enabled yet or the user information is incorrect.** Go to the main setup page. On the left menu, select [System Setup] > [DDNS], and check if your have the right user information and domain name. Also check with your service provider to see if your service account is active.
	Incoming traffic to the network camera is not allowed. Please refer to the "Remote Viewing via Internet Explorer" section in the troubleshooting chapter of this manual and look for instruction on enabling port forwarding.

Symptom	Possible Cause / Solution
Part of image becomes pixelated / Square color blocks are seen	**Network bandwidth is insufficient.** Without sufficient bandwidth, video quality will deteriorate and image errors like pixelation or frame-drop may occur. When you view your NVR and the cameras connected to it remotely over the Internet, the cameras need sufficient upload bandwidth to transmit video stream to the NVR and the NVR itself also needs sufficient upload bandwidth to transmit video stream to your viewing PC. And your remote viewing PC needs sufficient download bandwidth to download video stream. To gain satisfactory video quality, ensure there is sufficient upload bandwidth available to your NVR and the network cameras connected to your NVR by: 1. Contact your Internet Service Provider (ISP) to confirm the upload / download speed limit of your service. If the bit rate of the video stream is set at 512Kbps or higher but your Internet service only provides a max. of 512Kbps for upload bandwidth, then try to lower the bit rate setting in [Setup] > [Surveillance Setup] > [Camera Setup]. Consider the following action to ensure sufficient download bandwidth at your remote viewing location: 1. Contact your Internet Service Provider (ISP) to confirm the upload / download speed limit of your service. If the bit rate of the video stream is set at 3Mbps or higher but your Internet service only provides a max. of 2Mbps download bandwidth, then try to lower the bit rate setting in [Setup] > [Video]. 2. Upgrade to Gigabit network switch. Regular 10 / 100 Mbps network switch cannot handle multiple megapixel channels, thus you may consider upgrading to Gigabit network switch for your network infrastructure. 3. While you are viewing the network cameras remotely, shutting down any other applications that are also consuming network bandwidth in the background.
Camera connection is dropped from time to time	**Camera's video settings need to be fine-tuned.** You may log onto your Compro IP camera's setup page and adjust the maximum exposure setting under low light behavior section in the camera settings page and use a different video preference in the video settings page. Maximum exposure and video preference both affect the interval between i-Frames in the video stream which is something the NVR uses to determine the quality of camera connection. In essence, when connection keeps getting dropped, you may try setting the video preference to increased motion smoothness, and set the maximum exposure in the low light behavior section as 10 FPS. Refer to the video settings section and camera settings section in the user manual of your Compro IP camera.
	CPU usage is too high. Viewing multiple megapixel channels on the LiveView screen simultaneously may require significant CPU resources. In some cases, the camera connection could be dropped when the CPU usage on your viewing computer gets too high. When this happens, try switching to single-channel view on the LiveView screen. You can monitor the CPU usage by right clicking on your Windows taskbar and choose "task manager", and then click the Performance tab.

Symptom	Possible Cause / Solution
The one-touch backup button is not functioning	**USB storage device is not connected properly or is damaged** The one-touch backup button on the front panel is meant for backing up data onto the USB storage device connected to the FRONT USB port. Also, try unplugging the USB storage device and connect it to other device and see if it can be accessed normally.
	One-touch backup function is disabled Go to [Setup] > [Backup] > [One Touch Backup], and see if the "Enable the front backup button" option is checked.
Unable to find video just recorded minutes ago	**NVR has not yet saved video data as complete files** Video data being recorded on the NVR are only saved as complete files on the hard drive after a period of time expires. In version 4.0 firmware, the time interval between each save is 10 minutes. Any videos recorded prior to the next save are not complete files yet on the NVR's hard drive and can neither be searched nor retrieved before being saved.

Contacting Compro Technical Support

Before you submit an email for support, please check the troubleshooting section in the user manual. You may fill out the form (http: / / comprousa.com / en / form.htm) or directly email to support@comprousa.com.

Compro Technology, Inc.
www.comprosecurity.com
Tel. +886 2 2918 0169, Fax +886 2 2915 2389
3F, No.12, Alley 6, Lane 45, Pao Shin Road,
Hsintien District, New Taipei City 231, Taiwan

Chapter 9: Technical Specifications

RS-2212 / RS-2208 Technical Specifications

SYSTEM	
Operating System	Embedded Linux, safe from crashes and virus attacks
CONNECTORS	
LAN Port	Gigabit RJ-45 Ethernet port x 2
USB	USB 2.0 x 2 (front x 1, rear x 1)
SUPPORTED CAMERAS	
Camera	All IP cameras in Compro IP series and NC series; Compro video server; ONVIF-conformant IP cameras
Camera Administration	Individually adjustable video settings for each camera
VIDEO RECORDING	
Recording Connection	RS-2208: 8 channels, H.264/MPEG-4/MJPEG RS-2212: 12 channels, H.264/MPEG-4/MJPEG
Recording Mode	Continuous, motion-triggered recording, tampering-triggered recording, scheduled recording (daily, weekly, specific day), audio-triggered recording, IO-triggered recording, manual recording
Pre- / Post-Event Recording	Yes, pre-recording: up to 5 sec post-recording: up to 300 sec
Recording Bitrate	Per camera specifications
Compression Format	M-JPEG, MPEG4, H.264 (depending on camera)
Disk Usage Limitation	Max capacity, specified size limit, percentage
File Management	Loop overwrite; keep data by day; never erase
AUDIO	
Compression	PCM G.711
2-Way Audio	Yes
PLAYBACK	
Search Mode	By date/time/channel/event
Playback Control	Play, pause, next frame, previous frame, beginning, end, playback speed adjustment, multiple playback speed
Advanced Playback Feature	Snapshot, digital zoom, file download
STORAGE	
Local Storage	3.5" SATA I/II HDD x 2
HDD Capacity	Up to 3.0 TB per disk
Disk Mode	Single, RAID 0, RAID 1, JBOD/ linear
Remote Storage Mode	Share folders on Windows OS, NAS, FTP server
Services	FTP, SMB/CIFS
EVENT HANDLING	
Event Type	Motion, tampering, schedule, manual, audio, IO
Event Handling	Recording, instant e-mail, SMS alert
PTZ CONTROL	
Direction Control	Home, directions x 8

Zoom	Depending on camera support
ePTZ	1~10x digital zoom, center mode
Advanced PTZ Feature	Preset position, patrol group, speed control, focus control
NETWORK	
Protocol	DDNS (iDDNS) / PPPoE / DHCP / HTTP / NTP / DNS / FTP / SMTP / ARP / ICMP / IPV4 / TCP/IP / UDP
Dual Gigabit LAN	Yes
Multi-IP setting	Yes
SECURITY	
Event Logs	Detailed record of all events
User Management	Yes
Authentication	ID, password
Account Administration	Configurable user privileges
Group Management	Multi-level and multi-feature individually configurable
BACKUP	
One Touch Backup	Yes
USB Backup	Yes
GENERAL	
Setup Utility	iWizard
Languages	English, Traditional Chinese, Simplified Chinese
Viewing System Requirements	OS: Windows XP/ Vista/ 7 Browser: Internet Explorer 8.0 or later
Certification	CE, FCC
Operating Environment	10 ~ 40 °C
PHYSICAL	
Dimensions	239 mm (L) x 100 mm (W) x 142 mm (H)
Gross Weight	3,265 g / 7.19 lb.
POWER	
Power Supply	AC100~240V 50/60Hz in, DC 12V output
Power Consumption	Max. 6W (without HDD)

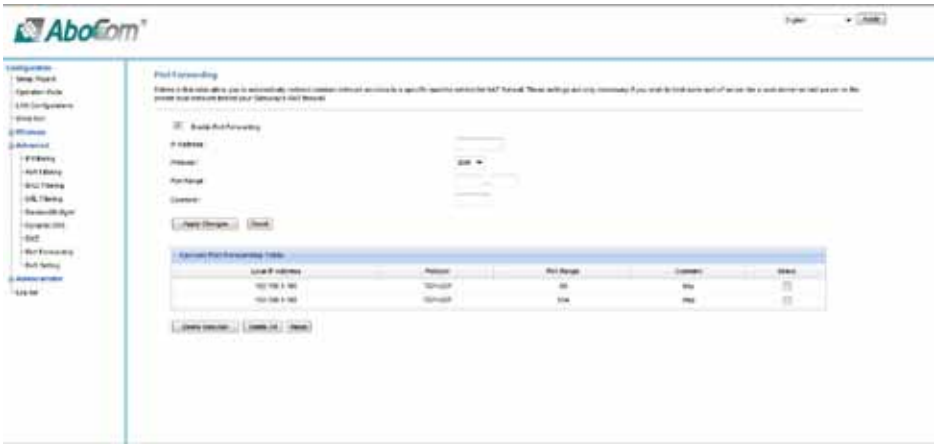
* Specifications are subject to change without prior notice.
* Compro Technology does not guarantee full functionality or compatibility across ONVIF cameras; individual experience may vary based on the camera model and firmware used.

Chapter 10: Appendix

Examples of Port Forwarding Setup on Routers

The following are some examples of router configurations with regard to port forwarding / port mapping / virtual server on some popular router products. You can also log on to portforward.com for more port forwarding setup examples on other router products.

Abocom WAA813rn Port Forwarding Setup

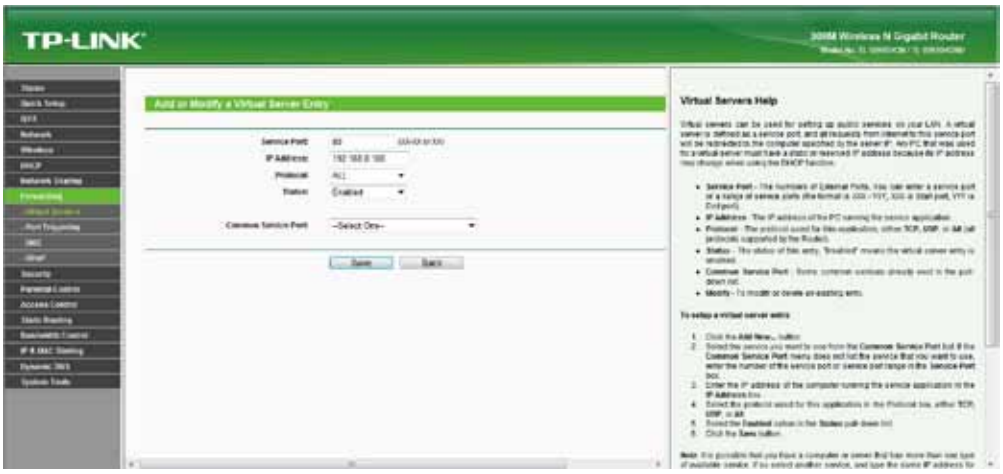


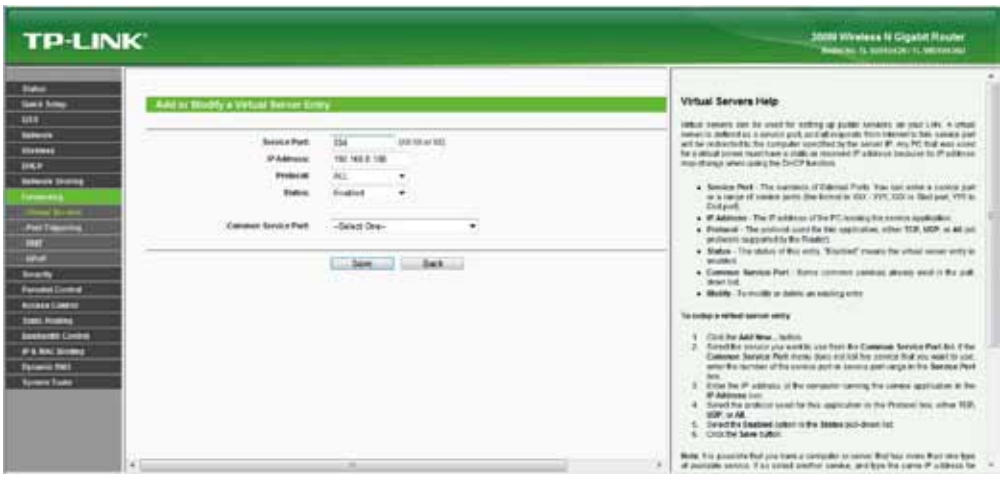
ASUS RT-N12 Virtual Server Setup

D-Link DIR-655 Virtual Serve Setup

Product Page: DIR-655
Hardware Version: B1
Firmware Version: 2.30
D-Link
DIR-655
SETUP
ADVANCED
TOOLS
STATUS
SUPPORT
VIRTUAL SERVER
PORT FORWARDING
APPLICATION RULES
QOS ENGINE
NETWORK FILTER
ACCESS CONTROL
WEBSITE FILTER
INBOUND FILTER
FIREWALL SETTINGS
ROUTING
ADVANCED WIRELESS
WISH
WI-FI PROTECTED SETUP
ADVANCED NETWORK
GUEST ZONE
IPV6
IPV6 FIREWALL
VIRTUAL SERVER
The Virtual Server option allows you to define a single public port on your router for redirection to an internal LAN IP Address and Private LAN port if required. This feature is useful for hosting online services such as FTP or Web Servers.
Save Settings
Don't Save Settings
24 -- VIRTUAL SERVERS LIST
Port
Traffic Type
Name
Application Name
Public Port
Protocol
Schedule
IP Address
Computer Name
Private Port
Inbound Filter
Helpful Hints ...
Check the Application Name drop down menu for a list of predefined server types. If you select one of the predefined server types, click the arrow button next to the drop down menu to fill out the corresponding field.
You can select a computer from the list of DHCP clients in the Computer Name drop down menu, or you can manually enter the IP address of the computer at which you would like to open the specified port.
Select a schedule for when the virtual server will be enabled. If you do not see the schedule you need in the list of schedules, go to the Tools Schedules screen and create a new schedule.

TP-LINK wr1043n Virtual Server Setup





List of Figures and Tables

Figure 2-1. Package contents for RS-2208 / RS-2212 2-1
Figure 2-2. Hardware overview of RS-2208 / RS-2212 2-3
Figure 3-1. Installing new hard disks 3-1
Figure 3-2. Connecting the cables 3-2
Figure 3-3. Network setup 3-3
Figure 3-4. Scenario A 3-4
Figure 3-5. Scenario B 3-5
Figure 4-1. Hardware setup 4-1
Figure 4-2. Check LED status 4-1
Figure 4-3. Scan for your device 4-2
Figure 4-4. Set your password 4-2
Figure 4-5. Set the date / time 4-2
Figure 4-6. Configure the IP address 4-3
Figure 4-7. iDDNS setup 4-3
Figure 4-8. Storage setup 4-4
Figure 4-9. Set up your cameras 4-4
Figure 4-10. Review your settings 4-4
Figure 4-11. Applying your settings 4-5
Figure 4-12. Diagnosis page 4-5
Figure 4-13. Multi-device setup 4-5
Figure 4-14. Installing Compro ActiveX 4-6
Figure 4-15. Security Warning 4-6
Figure 4-16. Live view 4-7
Figure 4-17. iStart window 4-8
Figure 5-1. LiveView page 5-1
Figure 6-1. Playback page 6-1
Figure 6-2. Single file playback window 6-2
Figure 6-3. Multi-channel playback window 6-3
Figure 7-1. Main setup page 7-1
Figure 7-3. iStart window 7-2
Figure 7-2. Camera Setup page 7-2
Figure 7-4. Adding a Compro camera 7-3
Figure 7-5. Adding an ONVIF-conformant camera 7-5
Figure 7-6. Detecting cameras 7-6
Figure 7-7. Recording setup 7-8
Figure 7-8. Recording settings 7-8
Figure 7-9. Recording settings 7-9
Figure 7-10. Events and Notifications Setup 7-10
Figure 7-11. Email setup 7-11
Figure 7-12. SMS setup 7-12
Figure 7-13. System status page 7-13
Figure 7-14. Loading chart 7-14
Figure 7-15. Change display language 7-15
Figure 7-16. DDNS setup 7-16
Figure 7-17. Power management page 7-17
Figure 7-18. Restore options 7-17
Figure 7-19. Firmware update 7-18
Figure 7-20. Volume management page 7-18
Figure 7-21. S.M.A.R.T information 7-20
Figure 7-22. File sharing configuration 7-20
Figure 7-23. FTP server configuration 7-21
Figure 7-24. User management 7-22
Figure 7-25. Camera access rights window 7-24
Figure 7-26. Import user list 7-24

Figure 7-27. System event logs 7-25
Figure 7-28. Surveillance logs 7-25
Figure 7-29. Historical user list 7-26
Figure 7-30. USB backup configuration 7-26
Figure 7-31. Example of backup folder 7-28
Figure 7-32. Web CMS function on NVR WebVUer 7-29
Figure 7-33. Multiple server management - server list 7-29
Figure 7-34. Channel selection 7-30
Figure 8-1. Reset button 8-1
Figure 8-2. Remote viewing via web browser 8-2
Figure 8-3. Channel information window 8-2
Figure 8-4. Port forwarding 8-3
Table 2-1. LED status 2-4
Table 2-2. System beep codes 2-5
Table 3-1. IP addresses in scenario A 3-4
Table 3-2. Port numbers involved in scenario B 3-5
Table 3-3. Port mapping in scenario B 3-6
Table 3-4. IP addresses in scenario B 3-6
Table 6-1. Meaning of color bar 6-3
Table 7-1. Basic user information window 7-22
Table 7-2. Available user groups 7-23
Table 7-3. User rights table 7-23

COMPRO
TECHNOLOGY

www.comprosecurity.com

Compro Technology Headquarters
3F, No.12, Alley 6, Lane 45, Pao Shin Road, Hsintien District, New Taipei City 231, Taiwan
Tel. +886 2 29180169 Fax. +886 2 29152389